

OVERY

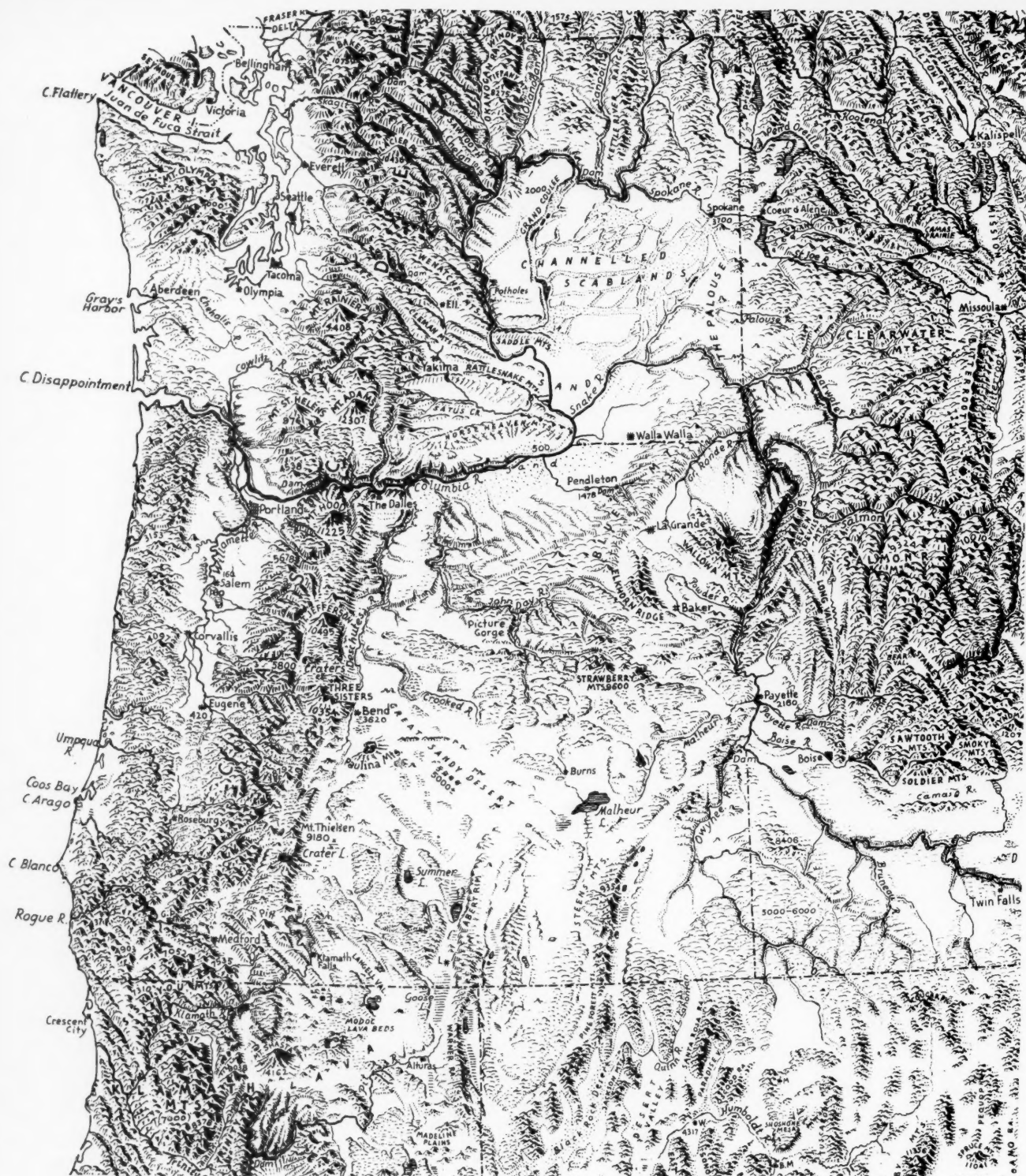
E PACIFIC WORLD

NT FORN OF SCIENCE

May - June 1952

Volume V - Number 3

50 CENTS



THE PACIFIC NORTHWEST. Part of a map entitled "Landforms of the United States," prepared at the Institute of Geographical Exploration, Harvard University, by Erwin Raisz, expressly for *The Physiographic Provinces of North America* by Wallace W. Atwood (1940). Reproduced by permission of the cartographer and of the publishers, Ginn and Company, Boston.

A JOURNAL OF NATURE AND MAN **PACIFIC DISCOVERY** IN THE PACIFIC WORLD

Editor and Art Director: DON GREAME KELLEY • Managing Editor: ROBERT C. MILLER
Associate Editors: A. STARKER LEOPOLD (University of California) • IRA L. WIGGINS (Stanford University)
BENJAMIN DRAFER, ROBERT T. ORR, EDWARD S. ROSS, VERONICA J. SEXTON (California Academy of Sciences)
Contributing Editor: RUTH E. HOPSON (Oregon)

Vol. V • No. 3

May-June

1952

SPECIAL ISSUES — this is our second *PD* with unified design — appeal to the editors. They intrigue the readers also, if we may judge from the many enthusiastic expressions we have had in response to our January-February "Desert" number. We do not intend to let the idea run away with us, but this "Northwest" issue immediately following is virtually a command performance. Many readers in that great region have asked us for more on the Northwest. It was never intentionally slighted, needless to remark. But as a source of unsolicited contributions it has always been more reticent with us than, say, the Southwest. Why, we do not know. Certainly not for lack of outstanding subject matter! Perhaps Northwesterners are just too busy coping with a still dominant Nature to take much time out for writing about their mighty land. We were immensely pleased to discover, at last, that we had more than enough top-grade material for a first all-Northwest issue. Our only regret is for the several other excellent articles we might have used had there been more space. Our chief hope — expressed under "Reviews" in the back pages — is that all our readers, especially those outside the Northwest, will be stimulated to reading further. A good deal *has* been written about that land of giant timber, gigantic rivers and mountains, and great undertakings — much of it by Northwesterners.

Other special issues in the planning stage include one on South Pacific islands; one on Baja California; and a special souvenir issue for the long-awaited opening of the Morrison Planetarium at the California Academy of Sciences. We ask again for suggestions and comments.

Ray M. Filloon of Portland, Oregon, is one Northwesterner who has been too busy living a useful and adventuresome life to think of writing about it. Only with the leisure of retirement was he prompted by another *PD* contributor, Professor Ella E. Clark ("Smokejumpers," *PD*, July-August 1951), to put on record his life-long experience of the Northwest Indians' annual "Huckleberry Pilgrimage." Mr. Filloon is one of the best known and most highly regarded citizens of the Mt. Adams area. It pleased us to get and comply with a request from Bernard B. Pollard of the *Mt. Adams Sun* for permission to reprint the article in that Bingen, Washington, paper's centennial issue of June 5. The occasion will be celebrated with a three-day pageant, "The Mt. Adams Story." . . . ¶ **Dr. Victor B. Scheffer** of the U. S. Fish and Wildlife Service, Branch of Wildlife Research, Seattle, dropped anchor in the Bay during an official cruise, lately, and left with us his kind permission to do our editorial worst to his long paper on the Olympic mammals. We'd like to have given it the entire issue it deserved. . . . ¶ *PD* is so often filled with trees and landscapes that we hope **Donald Culross Peattie** will not mind our dressing up "The Canoe Cedar" like an article on *The Art of the Northwest Coast Indians*, when it is actually to be a chapter of his forthcoming book on *The Natural History of the Western Trees*. Houghton Mifflin will publish Mr. Peattie's book this fall. We are indebted to the University of California Press for use of the plates from Robert Bruce Inverarity's beautiful book, which is reviewed in this issue. . . . ¶ "Triangle Island" is the outcome of a conversation our Managing Editor, Dr. Miller, had last year at a professional convention with his fellow museum director, **Dr. G. Clifford Carl**, of British Columbia's Provincial Museum in Victoria. Both directors are active field biologists whenever they can get away from their institutional desks. . . . ¶ **Dr. Robert C. Miller's** association with the "Seagoing Scientist" subject of his Pacific Profile goes back to his own years as professor of zoology at the University of Washington and member of the staff of the oceanographic laboratories at Seattle and Friday Harbor. D.G.K.

PRE-DISCOVERY

IN THIS ISSUE

EDITORIAL

Farthest Northwest 2

Huckleberry Pilgrimage

RAY M. FILLOON 4

Animals on Olympus. Adapted from VICTOR B. SCHEFFER 14

The Canoe Cedar

DONALD CULROSS PEATTIE 18

Triangle Island

G. CLIFFORD CARL 24

PACIFIC PROFILES: Seagoing

Scientist. R. C. MILLER 28

REVIEWS

30



THE COVER COPY

The head of the totemic slate carving (cover) represents the Thunder Bird. The whole object (here) is about 14 inches long. Museum records show it was obtained from the Tlingit, but the style strongly suggests Haida origin — trading was common between tribes. *PD* thanks the Anthropology Museum of the University of California, Berkeley, for allowing it to be photographed in the San Francisco studio of Elmer Moss.

PACIFIC DISCOVERY is published bi-monthly at Gillick Press by the California Academy of Sciences. Publication office: 2057 Center Street, Berkeley 4. Editorial and Advertising offices: Golden Gate Park, San Francisco 18. Subscriptions: \$3 per year; single copies: 50c. Members of the Academy subscribe through their dues. Entered as second-class matter, February 17, 1948, at the Post Office, Berkeley 4, California, under the act of August 24, 1912.

COPYRIGHT 1952 BY CALIFORNIA ACADEMY OF SCIENCES

Farthest Northwest

NORTHWEST is a word of many meanings, though perhaps in last analysis they resolve themselves into one. The term may be an adjective or a noun, a direction or a place — or a whole series of places. In its broader implications, it involves a state of mind and a way of life, inspired with the vigor of youth and the flavor of perpetual adventure. In the dictionary it is defined in part as "that point on the horizon which lies between north and west, and is equidistant from them." Perhaps that is the essence of it, a point on the horizon — forever drawing the mind to something beyond.

Geographically its location has changed progressively through the years. In the time of Julius Caesar, the Northwest was Transalpine Gaul, and Britain. By the ninth century it was Iceland, and by the tenth century Greenland. In 1609 Manhattan Island was the Northwest; in that year Henry Hudson sailed 150 miles up the river that bears his name, seeking a "northwest passage" to the Orient.

In 1787 Congress set up as the Northwest Territory an area of some 250,000 square miles lying west of the Alleghany Mountains and north of the Ohio River. The proximal part of this area, known as the Western Reserve, was claimed by the State of Connecticut, which finally ceded it to the Federal Government in 1800. Subsequently the Northwest Territory became Ohio, Indiana, Illinois, Michigan, Wisconsin, and part of Minnesota. That is how it came about that Western Reserve University is in Cleveland, and that Northwestern University, incorporated in 1851, is near Chicago instead of in Portland, Seattle, or Spokane.

By the turn of the present century, the Northwest had shifted until what was formerly its western had become its eastern border. In the *Century Dictionary*, edition of 1903, the Northwest is defined as, "in the United States, Wisconsin, Iowa, Minnesota, North Dakota, South Dakota, etc.," with the further explanation, "It is a rather vague phrase; sometimes other States or Territories may be included." Vague phrase, indeed! Well, we propose to clarify it.

Today, half a century later, Wisconsin, Iowa, and Minnesota are definitely of the Middle West. North and South Dakota are the northern Prairie States, Montana and Wyoming are in the Rocky Mountain belt. Once more the Northwest has shifted. Before it gets away again, we are going to define it as that part of the continental United States lying west of the Rocky Mountains and north of California and Nevada.

It is true that in this Northwest issue of *Pacific Discovery* we give a nod to British Columbia with

an article on Triangle Island; but we must remind our British Columbia friends that their province is really a part of Canada's Great Southwest. As for Alaska, we are going to nimbly side-step the question as to whether that is or is not part of the "continental" United States. Anyway let there be no wounded feelings; we are presently going to devote a whole issue to Alaska, and the occasion will be — we hope — its admission to statehood.

The Northwest, however you define it, is a land of superlatives. It is a land of rugged mountains, with towering peaks that are clad in eternal snow; a land of mighty glaciers, and crashing waterfalls, and tremendous evergreen forests, and vast plains, and lakes unbelievably blue and deep (Crater Lake, 2,000 feet; Lake Chelan, 1,479 feet), and of bays and estuaries that are almost inland seas. Few places in the world boast higher mountains visible from sea level (Rainier, 14,408 feet; Baker, 10,750; Hood, 11,245). Nowhere else in this country are there metropolitan areas of more than half a million people (Portland and Seattle) located within sight of perpetual snow.

The Northwest is a land of contrasts. It has some of the wettest and some of the driest places on the North American continent. It has regions where the forests are so dense, dank and impenetrable that they can be compared with the rain forests of the tropics, and regions so arid that they require immense irrigation projects. On the southwest slope of the Olympic Mountains, the rainfall exceeds 150 inches a year and gives rise to a dozen rivers—among them the Hoh (pronounced "hoe"), the Clearwater, the Quinalt and the Wynoochee, this last a river you may have trouble finding on the map but which, according to the Weather Bureau, drains the wettest spot in the United States. At Sequim (pronounced "skwim"), hardly thirty miles away as the crow flies*, the annual rainfall is only 15 or 16 inches; and at Hanford, a couple of hundred miles to the southeast on the Columbia Plateau, the average rainfall is only 5.8 inches a year. Try and grow your vegetables on that!

The Grand Coulee is the driest of all large rivers — or the largest of all dry rivers, whichever you prefer. It is a vast, awe-inspiring gorge which the Columbia River carved, then carelessly abandoned for a different course. There is even a Dry Falls, where once the mighty Columbia crashed down four hundred feet with a thunder there were no human ears to hear. Now the former plunge pool is a peaceful lake, and the only sound

*We refer of course to the Northwestern Crow, *Corvus caurinus* Baird.

is the faint twitter of white-throated swifts that nest high up on cliffs once washed with spray.

The Northwest is further remarkable for the etymology, orthography, and phonetics of its geographic names — many of them from Indian sources, and some from no one knows where. We knew a lady from the East who became extremely annoyed when she was shown, in fairly rapid succession, Lilliwaup Falls and the Duckabush and Dosewallips rivers; she was sure her Northwest friends were inventing these names on the spur of the moment for her particular benefit.

The Northwest's mightiest waterway, Juan de Fuca Strait, is named after a man who was never there, and who seems to have been somebody else in the first place. According to some sources, Juan de Fuca was the alias of a Greek mariner named Apostolos Valerianos. At all events it appears certain that he never saw Juan de Fuca Strait.

One of the landmarks that guide the mariner in Puget Sound is Point No Point, which is just across the Sound from Useless Bay. In the 80's there was also a town of Useless, but it failed to survive for reasons that appear self-evident.

If we were conducting a spelling bee and wanted to terminate it as quickly as possible, we would start calling out such names as Umpqua, Clackamas, Clatsop, Owyhee, Stilaguamish, Puyallup, Wawaei, Tshletshy, and Koontz Coulee.

If the Northwest is a land of superlatives from the standpoint of natural wonders, it is also a land whose citizens are both willing and able to invent new superlatives at the drop of a hat.

The drug store at Friday Harbor, Washington, on San Juan Island, used to advertise itself, and probably still does, as "the farthest northwest pharmacy in the United States." Bellingham, a fair-sized city, is farther north; and Port Angeles, with a normal complement of drug stores, is farther west. But *farthest northwest* — that is a claim not easy to disprove.

Jimmy King, who lived three-quarters of a mile from the Friday Harbor drug store, out along the Roche Harbor road, was five feet tall, somewhere upwards of half that wide through the shoulders, and as hard as iron and as tough as nails. It was his proud claim that he was the strongest *little* man in the world. To establish this as a scientific fact might entail considerable research; but we are willing to concede without argument — to stipulate, as the attorneys say — that Jimmy was, and we hope still is, the farthest northwest strongest little man.

The farthest northwest strongest man, free style, is — according to the best available information — Johnny Huelsdonk, who carved out a ranch up

along the headwaters of the Hoh River, and is known throughout the length and breadth of the Olympic Peninsula as "the iron man of the Hoh." Johnny settled there a few decades back, built a home and raised a large family on a ranch so isolated that it was many miles from the nearest road. The only access was a foot trail that might have given pause to a mountain goat if it were the least bit tired or nervous.

Things do wear out or become obsolete, and from time to time Johnny had to replace his modern conveniences. One day a surveyor encountered him toiling up the 22-mile trail to his ranch with a new kitchen range on his back. "Isn't that stove pretty heavy?" our surveyor inquired sympathetically. "It's not the stove that's bothering me," Johnny replied, pausing to shift his load, "it's that hundred-pound sack of flour I've got in the oven."

We cannot leave the Olympic Peninsula without putting in a nostalgic word for Neah Bay, a place we have visited many times both by land and sea, and which is an integral part of our own concept of farthest northwest. We do not propose by this statement to dispute the claim of the Friday Harbor drug store — there is no drug store at Neah Bay!

Neah Bay is the name both of a body of water and of a village along its shore. As a body of water, it is the first haven of refuge inside Juan de Fuca Strait; and we have looked with joy on the friendly lights of Neah Bay after many a stormy bout with the North Pacific. As a place of residence, it is the leading — in fact, the only — metropolis of the Makah Indian Reservation. Inasmuch as some of our readers may not readily form a mental picture of a small Indian community at the extreme northwest tip of the United States, let us mention that it boasts such familiar adjuncts of American living as a restaurant, a general store, a schoolhouse, and a Presbyterian church.

One of the pillars of that church for many years was Luke Markishtum, now gone to his reward. Luke was once elected to represent his presbytery at a conference in upper New York. He returned from this trip somewhat disillusioned regarding the geographical knowledge of Presbyterians in the East. When he told his fellow conferees he was from Washington, they invariably assumed he meant Washington, D.C. "And do you know," Luke reported wonderingly after his return to Neah Bay, "when I told them I meant the State of Washington, some of them argued with me and said there was no such state!"

To any remaining skeptics in New York or other parts of the country, Northwesterners will join in echoing Luke's reply, "Come and see." R.C.M.



HUCKLEBERRY PILGRIMAGE

DURING THE HUCKLEBERRY SEASON when I was a boy, fifty or more years ago, I used to see Indians, hundreds of them, jogging along on their Cayuse ponies in a cloud of dust. They were on their way to pick in the berry fields in the high country near Mount Adams.

Second highest peak in the state of Washington, Mount Adams is in what is now known as the Gifford Pinchot National Forest, which lies between Mount Rainier National Park on the north and the Columbia River on the south. Countless generations of Indians have come every year to the huckleberry fields around the mountain. They still make their annual treks to Mount Adams, through the village of Trout Lake, but they now practice few of the colorful customs of the past.

Ten-gallon "hat"

In the old days the huckleberry pilgrimage was a vivid sight, with each tribe headed by its chief decked out in his bright blanket and other trappings. The ponies too were of many different hues

and markings, including buckskin, spotted, bay, sorrel, gray, and other colors in between. In the saddles and on the ponies' backs were brightly colored blankets, and astride the animals sat men, women, and children, each with a short whip or quirt used continually to urge the ponies along. The ponies paid no attention, going no faster than a dog trot in spite of the urging. It was likely a mere habit on the part of both horse and rider.

The women wore brilliant silk scarves over their heads, scarves so highly prized that one would bring ten gallons of huckleberries, more than a day's hard picking, in trade at a white man's store. The berries at that time were valued at 50 cents a gallon but now bring \$2.50 to \$3.00.

Blankets were piled on the riding ponies, not just to sit on, but to save room on the pack animals for the rest of the equipage. An Indian took all of his possessions with him whenever he traveled to the huckleberry fields. Loose ponies, colts, and numerous dogs made up the rest of the cavalcade.

Even in my boyhood I had a so-called camera,

RAY M. FILLOON

a little 2x2 glass plate affair which I had earned by selling \$3.00 worth of bluing. I missed my chance, however, for the sight was so utterly commonplace I did not consider it worth taking. What wouldn't I give today for that forever lost opportunity! While my camera now is even smaller, it takes color.

But I do have records of these Indian pilgrimages and customs in my memory!

Born and raised in the vicinity and spending most of my life among the Indians, I had a grand opportunity to know them, talk to them, and learn much about their life and customs. I observed the Indians of the Northwest not only in my youth but also during my fifteen years with the United States Forest Service. For eleven summers I was a Forest Guard in the Mt. Adams Ranger District of the Gifford Pinchot National Forest. There were four Indian national forest campgrounds in my bailiwick.

One by one the old customs are either gone

started. It burned until quenched by rains in the fall, mostly because of the lack of money, equipment, and modern know-how with which to fight. Though fifty men fought this fire all summer, the equipment consisted only of axes, shovels, and saws. Modern organization and methods would have stopped it almost as soon as it started.

The picture has another side, however; berry bushes grow not only in these burns but also in the surrounding second-growth timber that is fast taking over the burns. The bushes in the timber produce little if any fruit, so as the fields are encroached upon the berry producing area becomes smaller and smaller. As proof of how rapidly this transition is taking place the present patch of 28 square miles has dwindled until it is less than one-third its size forty years ago. At this rate it will not be long until, like some of the old customs described in this article, berry picking in this area will be no more.

Huckleberries were, and still are, an important

It was a great sight, in those days, when Indians from four Northwest states came a-berrying to Mount Adams!

or on the way out. Seeing the "handwriting on the wall," the U. S. Forest Service in 1936, little more than a decade ago, decided that the customs still existing in the Mt. Adams country should be photographed before it was too late. The subjects of some of the pictures illustrating this article are not available for photographs today. They belong to a bygone era.

Berries and burus

The huckleberries of the Cascade Range grow in "burns" which are lands denuded of their timber by forest fires. Some of these burns of a hundred years ago or more are occasionally blamed on the Indian. While Indians may have set some of them, no doubt fully as many fires were started by lightning which, burning unchecked, destroyed vast stands of timber as well. Lightning fires today are quite common and there is no reason to believe they have not always been so. In 1914, part of this area, already an old burn and much larger than it is now, was completely gone over by a fire lightning

part of the Indians' diet, and though the log-fire drying custom is no more, the women are now canning them, by either the open kettle or cold pack method of their white sisters. These ways of preserving were beginning to come into use even in 1936 when the Forest Service had photographs made of the older Indian women still clinging to their log-fire drying customs. The younger generation will have none of it, for to them it all belongs to the old days when the Indian really *had* to live off the country.

Up until a decade or two ago almost all the berries were preserved by drying with reflected heat from a log fire. To do this an Indian woman selected a log, scooped out the earth along one side of it, and from this trench built up a parallel ridge about three feet from the log. The slope of the ridge on the side facing the log would be approximately 45°. Upon this she would place a tule mat or some other suitable covering and put a row of stones along the lower edge. Then she spread a thin layer of berries over the mat and set the log



Not a Daché original, but the chapeau probably cost the happy wearer a day's hard berry picking.

afire. She would have at hand a watertight basket of water and a bough broken off a near-by fir tree. If and when the fire got too hot in some place or a spark lit on her berries, she dipped the bough in the water and touched the spot, thus keeping everything under control. From time to time she stirred the berries, using a long thin-bladed oar-like paddle for the purpose. The drying took all day. When finished, the berries, raisin-like, would keep all winter.

The Indians came to the Mt. Adams huckleberry fields not only to pick berries but to hunt and fish, and for recreation. Most of them were Yakimas and Klickitats, their homes being nearest to the berry fields. But others came from far away places — Nez Percé from Idaho, Blackfeet from Montana, Wascos, Umatillas, and Klamaths from eastern Oregon, and others. They now come by automobile, but when the horse was their only means of travel the journey took days and days. At that time, though, camping places were an easy day's journey apart and the Indian is a past master in the art of setting up a more or less comfortable abode, at least to his standards.

Great White Chief Smoke-in-Eye

As far as camping is concerned, he has learned by long experience to be a conservationist. Especially is this true with respect to his campfire, for even with camp spots always at hand, the long years of use had made fuel scarce, even in the early days, and he had to make the best of the

Grandma stirred with an oar-like paddle; daughter has traded in her log for an open kettle, mason jars.

little which was available. The teepee he uses is so constructed that his fire may be built inside — contrast this with the white man's tent, with his fire built, of necessity, outside. The old saying, "Indian builds small fire, gets close; white man builds big fire, gets far away," is not an idle jest. It is very true. The white man uses up a lot of fuel with his fire, heats up all outdoors, roasts on one side, while freezing on the other, and gets smoke in his eyes. His copper-skinned brother, with a small fire built in the center, inside his teepee, gets an even heat all around, conserves almost all of it, is quite comfortable close beside it, and gets no smoke in his eyes, for the hole in the top of his teepee takes it all away. For further insurance against a possible down draft bringing smoke into his teepee, he fastens wings to the ends of two poles, outside and on either side of the smoke hole. They are easily shifted according to wind direction.

Squaw work

I have used the pronoun *he*, but it most properly should be *she*, for upon reaching the huckleberry country most of the real work fell upon the women. It was the woman who put up the teepee poles and wrapped around them the covering to provide a shelter for her family. This covering is now some sort of cloth, canvas, sugar sacks sewn together, striped bed ticking, etc., but in the old days skins of animals were used. Some of these coverings have Indian designs painted on them. The woman gathered the fuel for the fire built in the teepee, and of course prepared the meals. She picked the berries and preserved them for winter use. She looked after the children, the ones old enough trudging along through the patch with her, the baby or papoose on her back in a cradleboard. When she began picking berries the cradleboard, still with the papoose securely fastened in, was either leaned up against a tree or hung from a limb to swing gently and keep the baby amused while she picked.

If her lord and master killed some game it was she who carried it into camp. If the game happened to be a deer or other large animal, she also skinned and dressed it and saw to it that everything about the carcass which could be utilized for food, clothing, utensils, or for many other purposes, was saved. Nothing went to waste.

Before the hides can be used for making them into clothing they must first be tanned. The proc-



ess of tanning begins with the removal of the hair. This she does by soaking the hide in a solution of ashes and water until the hair "slips," after which it is scraped off. Then the brains of the animal are laboriously worked into the hide to soften it. After this is done it is laced on a frame and is worked and scraped some more, and from time to time the stretch in the hide is taken up by tightening the lacing. When completed, the hide is soft, dry, and pliable, also quite white. For some purposes it is left white, but for most uses it is placed in a smoke from smoldering rotten wood. It is this smoking process which gives the Indian tan its peculiar pungent odor. It also causes the article made from it to remain soft after repeated wettings. A moccasin or glove, for instance, would become much stiffer if made from white skins.

Many of the wearables made from the tanned hides have designs sewn upon them, the women using various colored beads, also porcupine quills, shells, elk teeth, etc. Some of these articles of clothing are worn at their ceremonials and at other times when they wish to "dress up."

The women also gathered roots and herbs for

food and medicine, and grasses and bark of the Western red cedar for making baskets. For food the principal root was the camas, an onion-like bulb which, though to some extent eaten raw, was usually first roasted and then further prepared in various ways. A few of the older women still gather these bulbs, but this custom is fast dying out. The younger generation now follows the lines of least resistance and patronizes the white man's store for all its needs, especially foods. The camas, found growing in damp meadows in late spring as a blue flower, is harvested in the summer after the stalks have dried down, indicating that the bulbs have matured.

In gathering the camas root a digging stick is used. This stick, once wooden, is now made of steel and is about three feet long. It is curved and sharpened on the business end, and has a short crosswise handle. It is pushed into the ground under the bulb, which is pried to the surface.

To roast these bulbs, a shallow pit is dug, a fire built in it, and stones added. When all is heated to satisfaction, the remaining embers are raked out, the pit lined with the heated stones, leaves placed

on them, bulbs put in, more leaves placed on top of them. Then the hot ashes and coals are placed on the leaves and earth is mounded over. A twig, about the size of a lead pencil, is then pushed gently through the mound to the bulbs and very carefully removed, thus leaving a vent. After forty-eight hours all is taken out and the roasted camas bulbs are then ready for final preparation by being pounded into a sort of doughy mass, which is mostly shaped into potato cake-like patties and baked.

The Indian women also have another important duty, basket making. For the ones made up in the berry fields they used Western red cedar bark — they haven't made this kind for a number of years, however, because of the scarcity of cedar trees. They were quite easy to make and took only an hour or two, once the bark had been brought into camp. These baskets ranged in size from one to ten gallons capacity and their construction allowed a free circulation of air to pass through the contents. Thus they were excellent containers for transporting the berries from the patch to their homes or to towns, where they were sold house to house or traded at stores for food or other goods.

Needing a basket, a woman peeled from a live tree a strip of bark double the length and slightly

wider than the diameter desired. Then she marked a sharp-pointed oval across the middle of the length of the strip. Along this line she made two parallel cuts about half an inch apart half way through the inner bark and removed this layer. This made a hinge so that when the two ends of the strip were brought together the basket was almost finished. The oval became the bottom and all she needed to complete the job was to take some laces made from the inner bark of cedar, fasten the sides together, and lace in a ring of cedar root around the top.

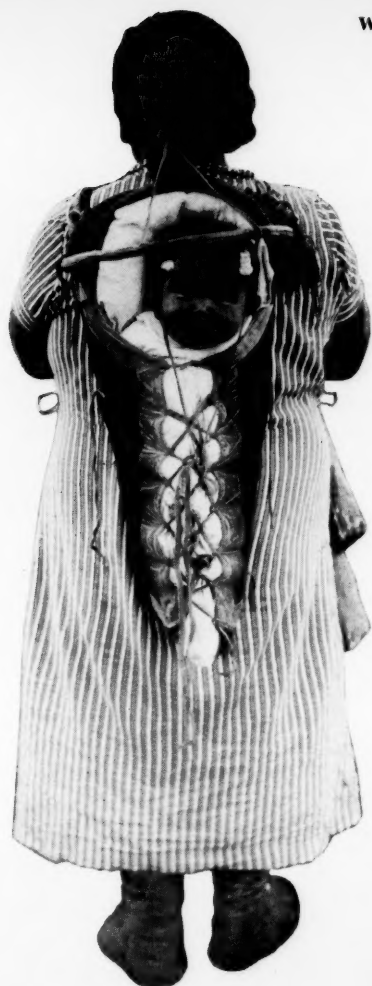
Hand-me-downs

Another type, the Klickitat basket as it is commonly called, is quite rigid and very durable, in fact some of them have been in use for more than one hundred years. This is borne out by the statement an old Indian woman made to me when I asked her how old was one of her baskets I admired. She told me it had belonged to "her mama's mama, and her mama's mama," repeating these words for several more generations of "mamas." The Indians still use this type of basket and prize it highly. This is not to be wondered at, for with the passing of the older generations who have made them, their manufacture has almost become



Hard work may have preserved grandma's figure, but mother and daughter figure they have everything to gain, preserving by modern cold pack and open kettle.

Wonder what's involved here when a quick change is needed?



a lost art. The women seldom worked on them while in the berry country, saving this chore for winters at home when they had more time. This type took an infinite amount of painstaking labor and skill. As some of the material used in the making, especially squaw grass (bear grass), was abundant in the high country, it was gathered and taken home for later use.

The squaw grass, bleached and dyed, was used as the principal material in the pattern designs woven into these baskets. The dyes were mostly obtained by pounding up berries and plants and, to some extent, minerals. One of the most potent dyes, yellow, was obtained from the root of Oregon grape. The framework, coil type, was of some sort of pliable twig or root, such as willow or cedar. The start was made in the center of the bottom, the basket progressing outward and upward in

ever widening circles until the desired shape and size were attained. The grass and split roots, etc., were so tightly woven together that the basket, when completed, was absolutely watertight. In bygone days the Indian women actually cooked in them. They placed food, water, and red-hot stones all together in the basket, changing the stones as needed until cooking was done.

Papoose need new moccasin

While the Indian women were busy with their more or less menial chores, their "lords and masters" were also occupied, though having more fun. The men, or "bucks" as they are generally called, hunted, fished, gambled with their stick or bone games, and/or raced their ponies. The women sometimes also indulged in these gambling sports but as a rule they were too busy elsewhere. The Indian was and still is, like some of his white brothers, an inveterate gambler. He would, if necessity arose, wager his all, even his wife, to back a hunch or a horse. Many an Indian in the old days has gone up into the huckleberry country proudly taking all his horses, blankets, everything he owned, and if luck frowned upon him has been forced to come out afoot.

The Indian race track, unlike the white man's





Deerskin is stretched and scraped.

between them. The gambling stakes are placed on the blanket. The side having the stick passes it from hand to hand behind the backs of the players, the object being for the opponents to guess in whose hand the stick is at the moment the guess is made. During all this the side with the stick keeps up a constant chant of varying pitch and tempo to confuse their opponents who, if they have made a good guess, rake in their winnings, take the stick, and with a new pile of stakes spread on the blanket, begin the game again.

This game has also gone the way of other old customs. While the blanket is still spread on the ground, monte, black jack, and poker of white man's invention are now played in place of the stick or bone game.

Huckleberry futures

One of the old customs still in vogue — I hope it will last a long long time — is the annual Huckleberry Feast held at the tribal home. Many of the Indians, though they have absorbed some of the white man's religion, still cling to parts of the teachings of their ancestors in which Spirits of one kind or another ruled. Each year, about the first or second week in July, when the huckleberries begin to ripen, a few Indians journey to the high country and bring back a few gallons of the fruit. Then the celebration begins. It lasts for several days and centers around the Long House, their place of worship.

The religious part of the celebration is held inside the Long House, most of it at night, where thanks are sent up to the Great Spirit for the birth of a new huckleberry season and prayers are offered for a bountiful crop. Ceremonial "dancing" accompanied by the rhythmic beating of tomtoms



circular one, was a straightaway, and in the horse-Indian days pony racing was top sport. An Indian would wager all he had in the world on his favorite mount. There are old legends to perpetuate the memories of some far away "dark horse," brought in to enter the races, taking the unsuspecting "to the cleaners" — just as today at the white man's track.

In playing the stick game or bone game (they are synonymous) the opposing sides sit upon the ground and face each other with a blanket spread

It is smoke-tanned for gloves, left white for clothing such as this ceremonial dress ornamented with beads and porcupine quills.



and singsong chants, now loud, now soft, changing from one to the other and back again, is performed by both sexes. They stand side by side in a long line facing the central area of their place of worship.

This dance, unlike that of the white man, is a most serious affair and is done by a shuffling of feet, the whole line moving sideways in unison. The participants dress in their best and brightest finery, consisting of beaded dresses, vests, leggings, moccasins, etc., of buckskin and velvet and other fine cloth. Eagle and other feathers are also used in their adornment. The women and girls wear bands of beaded work across their foreheads, and some of them have vests upon which are sewn row upon row of elk teeth and shells which, no doubt, have been obtained by trading with other tribes living along the sea shore.

Spectators sit or stand along the opposite wall, and for them also it is a solemn occasion. It is all a serious business, not to be taken lightly by anyone. At times an older man or woman will make a speech in tribal tongue or offer a prayer, and murmurs of the equivalent of the white man's "amen" will be heard in approval. Although white people are sometimes admitted to these ceremonies, they must consider it a privilege and show their appreciation by remaining quiet and solemn, as the Indians are.

While the nighttime religious part of the feast is quite solemn and serious, the daytime part, though serious, is not solemn. The days are taken up with games of various kinds, races, and feats of strength and skill, and of course money or other stakes change hands quite as they have for many, many past moons. When the days and the nights of the feast are over, the members of the tribe begin their annual journey to the huckleberry fields as they have been doing since long before the coming of the white man.

Next to godliness

Another custom also long practiced and still most popular is the manner of bathing. The Indian bathes, not only for the sake of cleanliness, but often as a cure-all for various ills. For this reason one of the first and most important things to do when camp is set up is to build a sweat house near a stream or even a small water course which can be dammed up to provide a shallow pool.

In making a sweat house, branches, butt end down, are stuck into the ground and their tips

tied together to form a half spherical framework upon which are spread blankets, bark, or other material. If bark is used, it is covered over with earth to make it steam tight. A hole in the side provides a doorway, to the left or right of which is dug a depression about a foot in depth and diameter. In this hole red-hot stones will be placed, and when water is sprinkled on them, steam for the bath will result.

The bath house is usually only large enough to be occupied by two people and the ceiling is so low they have to get down on their knees and bend over until their heads almost touch the floor. There is a reason for this as I found out when I tried to improve on the Indians' idea by building mine with a higher ceiling. It just did not work out, for the steam all collected in the space above our bodies and we were not even warmed by it. Then, too, with the head near the ground it is possible to breathe, for some air will seep in around the bottom of the doorway. When the sweat house is in use a blanket covers this doorway and almost all air is excluded. This would make breathing difficult, if not impossible, if one's head were at a high level when the room was filled with steam.

An hour or so before a bath is desired a fire is



Klickitat baskets.

built a few feet away from the entrance, and stones are placed in it to be heated red hot and raked into the hole in the sweat house at bath time. It might be well here to mention that some hot stones will chip and fly when water touches them, but the Indians' long experience guides them in choosing those which are safe to use. A few minutes before entering the sweat house, the bathers immerse in the pool near at hand, then come out and rake the hot stones into the hole above described, enter, and pull down the door blanket. One of them slowly sprinkles water on the hot stones and the whole interior fills with steam. They remain about ten min-

utes, come out, and again get into the pool for a rinse. Though the water may be ice cold in the pool, it actually seems warm for the short time they are in it.

From personal experience I can truthfully say the Indians' sweat bath is the most efficient way I have ever found to really get clean. In our forestry work, especially when building or maintaining trails, we would get so much dirt ground into our hands that ordinary methods would not get them clean. But from the sweat house, Indian pattern, which we built at some camps, we would come out clean as a baby fresh from his bath.

One thinks, while the steam is doing its work, that when the ten minutes are up all skin will have disappeared and that the rinse in the ice cold

plunge afterward will be an almost unbearable contrast, but the first time I was inveigled into trying one of these baths I found my hide all in one piece and the rinse water (an ice cold mountain stream) quite warm. Both were agreeable surprises hard to believe to anyone who has not had the experience. Needless to say, no coaxing or calling me a "pansy" was necessary after the initial bath.

Fading trails

Proof that the Indians had gone up into the huckleberry country long before the white man's coming is found by examining heavily timbered "islands" of second growth out in present-day burns and in the timber surrounding these burns. Being very much interested in such things I made a study of the whole area at every opportunity, first finding evidence resulting in the discovery of their old "highway" into the area. This highway, once a well worn trail, is now only visible in scattered sections, but at one time it went more than thirty miles through the huckleberry country alone. With feeder trails leading off from it at frequent intervals a network spread out to every part. In most places now all that can be seen to verify its existence long ago are sections of linear depressions with trees one hundred or more years old growing in them. At other places, especially where the grade is steepest, are trenches worn deep by water action from melting snows and heavy rains through the years. Scattered all through this dense forest are groups of shallow depressions indicating where encampment teepees had been, small heaps of stones where the inseparable sweat houses once stood, and not far away the all but obliterated long ridges and trenches with their rows of stones, where long ago the Indian women had dried their huckleberries for winter food. The logs once used have long since disappeared and no



This is Western indoor-outdoor living, Saturday night department, without dependence upon modern plumbing.





Chief Willie Yallup's memories of huckleberrying days go back three quarters of a century.

remnant of them remains. In places the use of these camp spots has been so long ago that depressions of any kind are non-existent. All that is left to show where they once were are rows of stones here, circles of stones there, indicating where a drying log once was in use or where teepees were weighted down around their bottom edges.

Indian Heaven

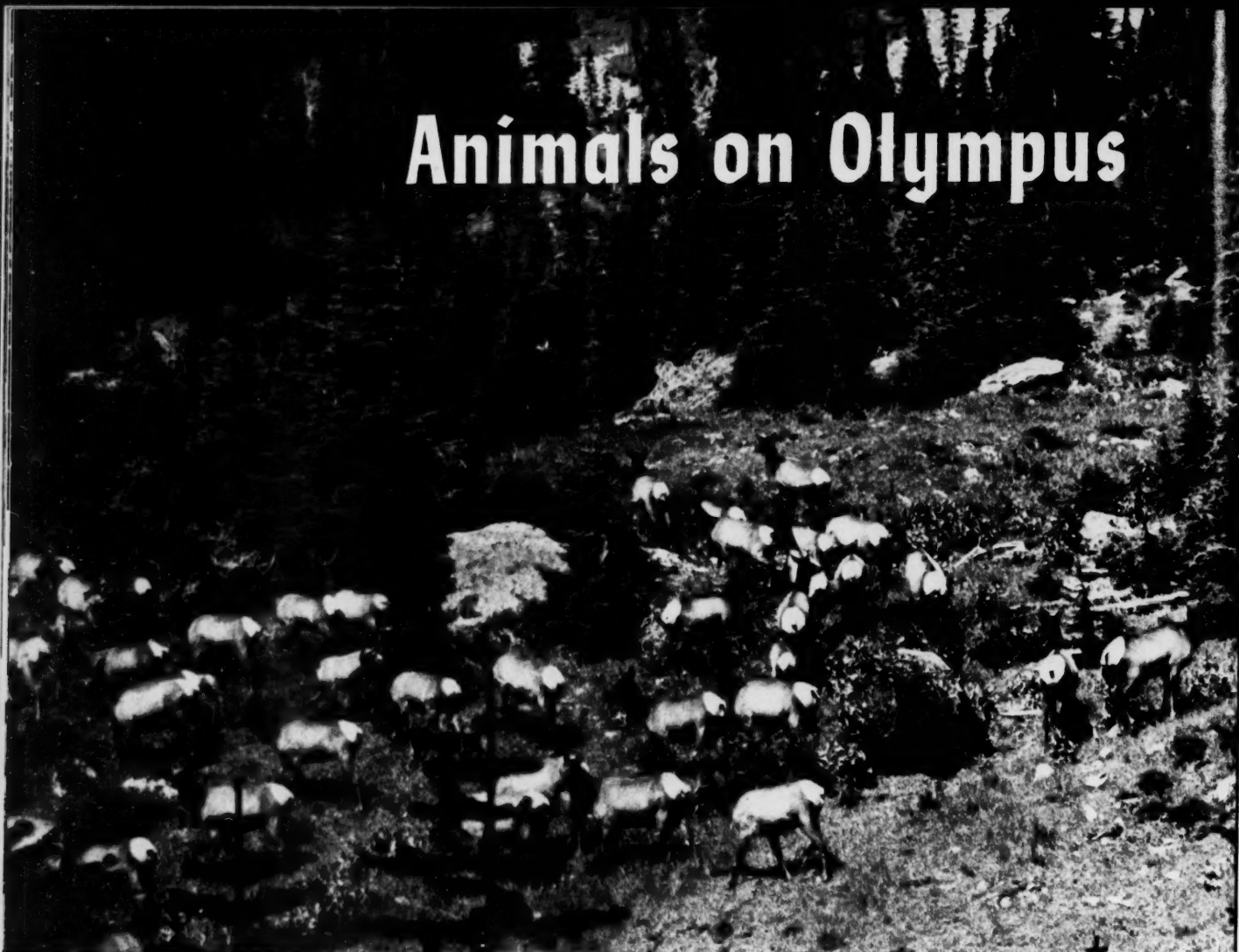
Piecing together these unmistakable indications of times long past and visioning how they once looked, I think that the berry country in those days must have been really something to see. Teepees, no doubt decorated with brightly colored designs painted on them and with smoke lazily floating skyward, dotted the grassy meadows. Strips of game and red filets of salmon hung drying in the trees, ponies of all colors were picketed here and there in the lush grass — all this with beautiful mountains for a backdrop makes a romantic mind picture indeed, a grand thing to behold.

The extent of these old reminders of a bygone era is mute evidence of the vastness of the Indian heaven it must have been long, long ago. A small part of the once vast huckleberry country, adjacent to its remnant, is still called Indian Heaven. It consists of high mountain meadows which are dotted with innumerable lakes, carpeted with brilliant wild flowers, and separated from each other by stands of Alpine type trees, such as mountain hemlock, alpine fir, and Engelmann spruce. Above all are sharp peaks.

This land, the edge of which is only a mile or so from the present huckleberry fields, has been set apart by the U. S. Forest Service as a Primitive Area, upon which there will be no roads, no commercialization, to be forever reached only by horseback or afoot. Not even motorcycles are allowed on the trails leading into or through the area. May it always remain so for those who love to get away at times from the humdrum, the noise, and the smells of civilization.

END

Animals on Olympus



Roosevelt elk on summer range in Olympic National Park. (A. L. Thompson)

SEA-GATE to the rich industrial empire of Puget Sound, Juan de Fuca Strait carries world shipping to busy ports past one of the wildest and last-explored corners of the United States — the Olympic Peninsula. Here in our farthest Northwest (excluding Alaska) the mightiest, densest coniferous forest on earth flanks the jagged snow-topped ranges of the Olympics. Scarce fifty years ago this glacier-carved, river-slashed highland was an unmapped mystery of blue-white peaks on far horizons. Now largely under national park, forest, and wildlife refuge guardianship, the peninsula is the permanent wilderness home of cougar, fisher, marten, otter, the free range of Roosevelt elk and black-tailed deer, hunting ground of the Northwest black bear and — up to twenty years ago — the timber wolf. Native to it are a dozen or more kinds of birds and mammals found nowhere else, and a total of 57 wild mammal species, not including strays or those

Adapted from a full-length illustrated paper by

VICTOR B. SCHEFFER



Black bear in the Silt River Basin. (C. Olympic Jones)



Spotted skunk on South Fork of the Hoh River.
(U. S. Forest Service — John E. Schwartz)

introduced, like the mountain goat, or exterminated, like the wolf, by man. From rocky Pacific beaches to glacier-hung Mount Olympus, the peninsula is a distinct and important wildlife unit.

The dominant feature of the Olympic Peninsula is the central mountain mass. Sharply folded sandstones, slaty and igneous rocks, have been cut by glaciers and numerous streams into rugged peaks and steep-walled valleys. Highest point is Mount Olympus, 7,954 feet above sea level. The Olympic Mountains are not, like the snowy cones of the Cascade Range, of volcanic origin.



Olympic cougar kittens found under a fallen log near the Upper Duganess River. (Lloyd Beebe)



▲ Snowshoe rabbit, female, resting on the ground after being removed from a snare. (Author's photo)

← Raccoon feeding along the Olympic peninsula coast near Yellowbanks. (Neil Mortiboy)



Mountain goats have taken over the Arctic-Alpine heights. Looking toward Mt. Olympus (upper right) from near Mt. Bogachiel. (Pacific Aerial Surveys)

Climatically, the peninsula is moist and cloudy in winter, dry in summer, and always moderate in temperature. North America's heaviest winter rains created the Pacific Northwest coastal forest of giant timber trees and, becoming snow in the mountains, they keep the perpetual white crown on the Olympic and other North Coast Range summits. From 160 inches on the west side, the annual rainfall of the Olympic Peninsula may drop to 10 inches on the northeast corner, in the "rain shadow" of the mountains. Timber line is fixed between 5,000 and 6,000 feet by moisture, especially snowfall, more than by temperature.

Between the extremes of coastal rain forest and alpine rock barrens, four major plant and wildlife associations are recognized on the peninsula. These *life zones*, fixed chiefly by temperature, may be recognized by their predominant trees and other *index plants*. Lowest on the Olympic Peninsula — sea level to 1,500 or 2,000 feet — is the Transition Zone: Western hemlock, Western red cedar, Douglas fir, Sitka spruce (for comparison, the Transition Zone on the western Sierra, in California, ranges roughly from 3,000 to 6,000 feet with Western yellow pine the chief index tree). The next zone up the Olympics is the Canadian — mainly between 1,500 and 3,000 feet: Western hemlock, lovely fir, Western white pine. Between 2,500 and 5,500 feet is the Hudsonian: Alaska cedar, alpine and lovely firs, mountain hemlock. Highest is the Arctic-Alpine — ranging from 5,000 feet to the summit of Mount Olympus: no trees. Altitude variation and overlapping reflect local differences in topography, moisture, and soil.

Animals, on the other hand, especially the larger mammals, tend to range up and down the zones, according to time of year, food supply, and breeding habits. Of the Olympic Peninsula nothing more definite can be said than that some kinds are more likely to be seen in one zone than in another — in a particular season. For example, elk and deer live mainly in the Hudsonian in summer, but winter forces them down to the Transition for their browse. In general the life-zone preferences, if any, of an animal are determined by the plants upon which it depends, directly or indirectly, for food and — in some cases — cover.

When the last great lowland ice sheet rode down from the north some 20,000 years ago it stopped just south of the Olympic Peninsula. The Olympic Mountains stood out as a virtual island with ocean on one



▲ (upper) A marmot surveys Hurricane Ridge from his rock cairn in the Hudsonian life zone. (Author's photo)

(lower) This marmot's home is Glacier Meadow in the Olympics. (Floyd L. Dickinson)





side, ice on the other. Many of the plants and animals now living on the peninsula are descended from ancient stocks. Cut off during the Great Ice Age from their relatives in the near-by Cascades, they evolved distinguishing characteristics. And some of the Cascade species have not been able, since the Ice Age, to cross the forested lowlands of the Puget Sound Trough and establish themselves in suitable Olympic habitats. Though they might logically be expected there, no grizzlies, wolverines, lynxes, pikas, or sheep — for instance — are found in the Olympics. But in modern times coyotes have followed the loggers in; porcupines and red foxes are on the threshold and expected to enter the peninsula soon; man deliberately transplanted the mountain goat and mule deer. Thus, for everyone interested in wildlife, the Olympic Peninsula is a great laboratory in which to observe the processes of natural evolution and the effects of modern wildlife management.

END

These mountain goats appear content with the lower elevations of Mt. Storm King above Lake Crescent. (Jack Walker)



THE CANOE CEDAR

ON A JUNE DAY IN 1805, near Armstead, Montana, the Lewis and Clark expedition buried the boats in which they had come, against the relentless current of the Missouri, a thousand toilsome miles and more. Now began their crossing of the Continental Divide, their goods packed upon the horses purchased from the Shoshones. Then they must find a navigable stream, on the westward slope where so many are unnavigable and perilous, that would carry them in boats down to the great Columbia and so to their goal, the shores of the Pacific. And near that stream, to build those boats, they must find growing a tree fit for the purpose.

To make the needed pirogue or dugout, such a tree must be of great size, big enough to carry not only men but food, trading goods, and all sorts of equipment. Its wood must be the lightest possible, for buoyancy and ease of portage around the rapids. It must, since they had but simple tools with them, be soft in texture, straight-grained, with easy splitting qualities. And it must not decay in water. Lewis and Clark could not know of any such tree awaiting them, for no white man at that date knew anything of the sylvia of the wilderness which we now call northern Idaho. Yet the success of the expedition depended on such a tree; already destiny had provided the passes, the Shoshones with their pack horses and, most marvelously, the Indian girl Sacajawea, found a thousand miles from her birthplace at the

moment they needed her most, to become their loyal and dauntless guide.

And now, as the hungry and exhausted men toiled through the gigantic jackstraw timbers of Idaho's primeval forests, the captains sighted, on September 20, "an Arbor-vitae" — one they noted as "very common and grows to a great size, being from two to six feet in diameter." Next day their journal remarks that "the arbor vitae increases in size and quantity as we advance," down toward the open valleys of the Clearwater. So on the 25th William Clark, with the Nez Percé Chief Twisted Hair, set out to find a promising grove of this new great tree. Near the present town of Orofino, Idaho, he located his boat timber, and here the party felled the trees whose stumps were still pointed out as late as 1900. With fire, mallet, and crude chisel, they fashioned four large pirogues and a smaller one, "to spy ahead." And on the morning of October 7, the fateful and illustrious band set out upon the last stage of the outward journey, downstream to the Pacific, borne in the great boles of the giant canoe cedar, which lumbermen today call the Western red cedar.

Those virgin forest conditions produced in this cedar enormous trunks such as we see today too seldom; in the early days trees were known as tall as 200 feet. But the lumbermen have left us a small race, and a specimen now regarded as a challenger is one near Lake Quinalt, in Olympic



DONALD CULROSS PEATTIE

National Park, which has a circumference of 62 feet and 8 inches, above the immensely greater base all swollen and buttressed and fluted as it is. In general trees with trunks eight to ten feet in diameter are considered large, in our times, while a trunk with a three-foot diameter is mature merchantable timber, in the eyes of the lumberman. If the tree grows too old, its magnificent proportions are, for the logging foreman's purposes, too apt to be spoiled by a decayed heart inside the shell of the bark with its ruddy armor of long, twisted fibrous strips.

But the camper, the hiker, the motorist, the tourist who explores coastal British Columbia and southeastern Alaska by boat, does not view the canoe cedar in terms of board feet. To him it is a tree of the utmost grandeur, as boughs sweeping from the narrowly conical crown nearly to the ground (for even in dense stands the lower limbs are not always self-pruned by reduced light but may be held tenaciously). Young limbs lift upwards joyfully; old ones spread downward and outward with majestic benevolence. And over all glitters the lacy foliage in flat sprays that are forked and forked again, drooping parted, like the mane of a horse, from the axis of the branchlet in a gesture of strong grace.

On Vancouver Island the canoe cedar reaches its greatest dimensions — so gigantic, even in our day, that they place it among the greatest conifers

of the world. But on the Queen Charlotte Islands, on the Olympic Peninsula and all around Puget Sound, on the mainland of British Columbia and on the islands and along the fiords of southern Alaska, the canoe cedar is scarcely less imposing. And it was there, where the mountains fall precipitously to the sea, where the glaciers glitter on the mountain flanks, and somber forests of hemlock, spruce, fir, cypress, and cedar march down to the very shore, that from ancient times there dwelt the Indian tribes who raised the famed totem poles, carved of trunks of the canoe cedar. And all the intercommunication of the villages of these tribes — the Tlingits, Haidas, and Tsimshians who were never conquered by the cruel Russians — was in canoes of cedar. No other Indians ever exhibited such artistic skill and technical mastery in woodworking of all sorts as these, and indeed it is said that the canoe reached its highest expression among these peoples. Their family canoes were from 20 to 25 feet long, fit to transport a whole household, complete with provisions and gear and trading supplies, a load that might comprise two tons. Even longer and stronger, yet still carved from a single trunk, were the voyaging canoes, sometimes as much as 65 feet in length, bearing three masts and sails and a mainstay-sail, and capable of carrying some thirty or forty people. So wondrous were these craft, so perfect in their lines, that — tradition states — models

at the ends to horizontal, and larger, at the center. Although the typical Haida shape, this canoe, which is now in the American Museum of Natural History in New York, was made by the Kwakiutl (AMNH photograph). All the plates used in this article are from the book, *Art of the Northwest Coast Indians*, by Robert Bruce Inverarity. Grateful acknowledgment is made to the author and to the publishers, the University of California Press.



Haida carved wooden rattle, representing a bear, 9 inches in length. In the British Museum.

(Copyright photograph, British Museum)

were carried away by the Yankee sailing masters of the late eighteenth century, and these furnished to the designers of the Boston and Salem clippers the lines of the fastest and fairest American ships ever moved by the wind.

Of cedar wood these warlike people made helmets, dagger handles, bows, arrowshafts and spear poles. Chieftains' carven batons, medicine men's rattles, and carved and painted household boxes were all fashioned from this beautiful wood that splits so easily and evenly, and takes color so well.

The coast Indians built their potlatch houses (feasting halls) of cedar uprights and stringers lashed together with bark of the same tree. Rough cedar planks were hewn out laboriously for the sidings of the house.

But it was into their totem poles that these proud people poured their artistic genius. The Indian artist, before the white man brought him steel tools, worked with cutting edges of jadeite and shell, yet he was able to achieve anything he desired in representation. If the legends and figures to be represented were many, he had to solve the complex problem of superimposing them. He did so with ingenious skill, and so clever are his simulations that the straight beak of the raven, the curved hook of the owl's beak, the shaggy hide of the bear, the springing legs of the frog are perfectly recognizable. The totem carver worked from no preliminary model; like the Greek sculptors of old he carried the whole design in his head and attacked his materials directly with his tools. The fine marks of those tools give to the old genuine totemic wood much of its vigor and texture; only in spurious modern imitations is there a smooth surface.

Many carvers achieved great reputations, remembered long after their deaths; they traveled from village to village, accepting commissions, and their fees were so great that a family frequently ruined itself to pay a famous artist. For the totem pole was not merely a form of genealogy and heraldry; it was frequently a funereal monument and might enclose in its base the sacred ashes of ancestors. Further, it embodied what the Indian considered history — not politics and war but such matters as the origin of the world and of mankind. Humor of a sort was not lacking in some of these columns; thus if a man owed another a debt that was not collected, a special pole would be erected by the creditor to tell the world about it in mocking symbolism, and this would continue to taunt the defaulting neighbor till the debt was paid. As a form of receipt, the creditor then destroyed the pole.

The prehistoric cedar poles were comparatively small affairs because the cost of carving a huge tree with primitive implements would have been prohibitive. Metal axes, saws, drawknives, froes and other European implements changed all this and in the nineteenth century the Indian artists were able to produce gigantic poles that dwarfed their villages. But this was the burst of glory be-

fore the end. The same outside influences that brought the tools of a more advanced technology brought disruption and decimation to the coast Indians. Alcohol, smallpox, and venereal diseases rotted the magnificent physique of these great peoples; a taste for the white man's luxuries caused a neglect of their tribal arts. And education under the missionaries turned many earnest red souls against the ancestral religion. They began to pull down and destroy their totemic columns, or to turn out debased and insincere imitations, colored gaudily with modern commercial paints, for the tourist trade. Whole villages were abandoned when families sought employment in the white man's settlements, and under the tremendous rainfall of the coastal area, the poles began to molder away, just as the very memory of the carving art and the knowledge of its religious symbolism faded in the Indians' minds. One hundred and twenty-five poles were counted in 1916, by a visitor to the deserted village of Tuxekan, and fewer than half were sufficiently preserved to be worth moving.

Then the Forest Service began to undertake the restoration of the vanishing art. Aged men who had been apprentices to master carvers in boyhood were found and set to work; their assistants were teen-aged Indian boys who showed a marvelous aptitude for learning though they had never handled a stone adze before. For only the primitive tools were used, only the original dyes, derived from native roots, berries, ferns, clays and ores. The ancient legends were again collected, the ruined models pieced together and studied, and finally Saxman Totem Park was established near Ketchikan, Alaska, where more than 50 reproductions of authentic poles preserve in cedar wood the art and history of the gifted coast tribes.

And much of the life of those tribes, from their beginning, was braided with the life of the canoe cedar. The fiber of its inner bark furnished them with their chief textile and cordage materials — sufficient indeed, for everything in their lives. Their blankets and clothing were composed of twisted twine or cord of cedar bark fiber for the

warp, while the woof was worsted spun from the wool of the mountain goat and dyed with brown, yellow, black, and white, to make superb totemic patterns. Woven hats of cedar bark fiber, shawls



and girdles of the same material, added to the costumes of men and women. Rope was regularly made from cedar bark, and provided (in default of nails or, rather, superior to any nails), the lashings that joined pieces of wood in all sorts of construction. Cordage of cedar bark made the dip nets and drag nets of these great fishermen, and their women wove it into bags and baskets for every use.

The white man has found so many uses of his own for the Western red cedar as to place it among the six premier coniferous woods of North America, and probably among the dozen greatest timber trees of the world in quantity cut, while in the more intangible matter of quality it is equally high. The only serious defect of red cedar is that it is not strong enough for heavy usage, but for house construction it is quite sufficient. It has a beautiful soft, close, straight-grained texture, making it a joy to work with the plane, and finishes to a satiny smooth surface. It takes and holds enamels, paints, and stains with the half dozen best of lumbers, and has superior glueing qualities for the production of laminated wood. A natural preservative oil in the heartwood makes it immune to decay to an unexcelled degree, without the use of artificial preservatives. It is thus superfluous to paint cedar to preserve it from rot, for even under severe climatic conditions it does

not deteriorate when left in a natural state. The coloring is extremely attractive, the almost pure white sapwood contrasting beautifully with the dark reddish brown to yellowish heartwood. When weathered by the elements, red cedar turns to a driftwood gray.

In the Pacific Northwest, this is a favorite wood for home building, and indeed it is exported to every state in the Union, partly on account of its freedom from the pitch that makes pine such a "hot" wood to live with, and so inflammable, and partly because it is among the lightest of all lumber when dried, and hence inexpensive to ship by rail. For mountain cabins, motor lodges, and the like, knotty cedar makes a handsome rustic interior finish, but more elegant effects are produced by clear lumber.

The famed durability of Western red cedar makes it a wood of the first class for flumes and mud sills and tanks, for barn boards and feed platforms, greenhouse wood, hotbeds, and nursery equipment in general — all of which are constantly exposed to changing weathers, to water, soil, and all the seeds of decay. Beehives are often built of red cedar, and silo doors, fence posts, well-curbings and stop gates. Because of its lightness and resistance to water decay red cedar is claimed, by its promoters, as the world's foremost material for boat construction.



A shaman or medicine man kept his collection of paraphernalia in this carved wooden box. On the lid is a raven with a crab in his talons. These boxes, for various storage uses, were made of one plank for all four sides, by cutting V-shaped grooves for the inside corners and bending under steam. The last corner was sewn up with a deerskin thong, with the stitching recessed for smoothness. Bottoms are rabbetted in. This is in the Anthropological Museum, University of British Columbia, Vancouver, B.C. (Visual Education Service, Univ. of B.C.)

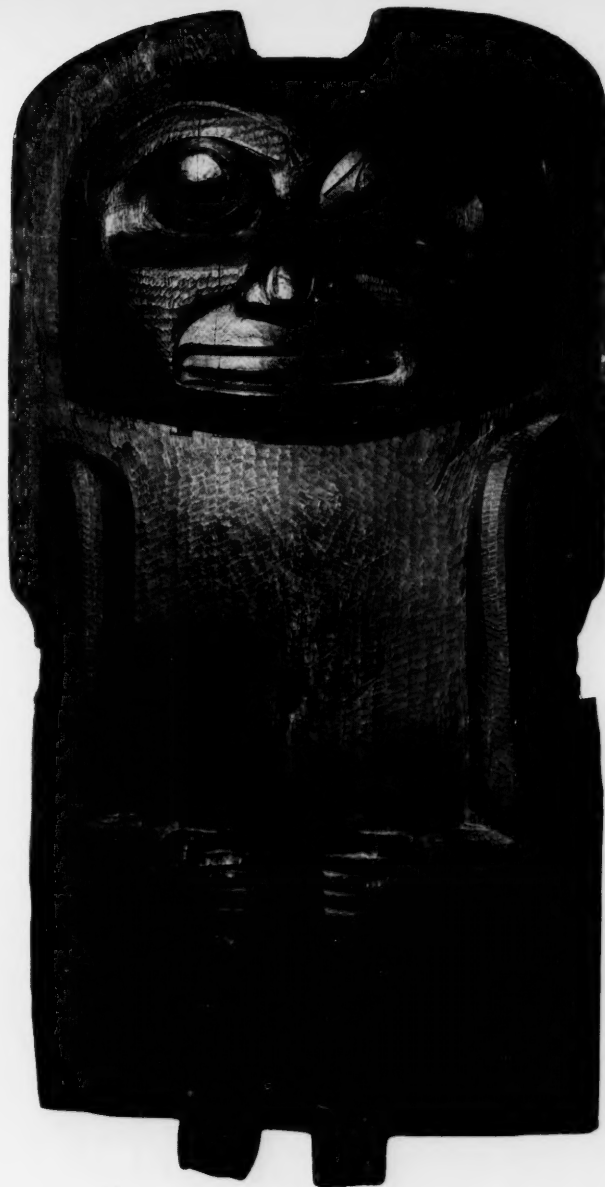
Everyone knows something about the heartwood of this magnificent tree — whether he knows it by name or not; he has tested its weight — or, rather, its lightness; he has seen its characteristic dark ruddy color and smelled its delicious odor; he has fingered its soft coarse grain, its ready splitting properties, and has often harkened to its characteristic pitch and timbre — when raindrops play upon it. For it is the leading shingle material of the United States, probably of the world. Today, 80 per cent of all shingles are made of Western red cedar. The large size of red cedar shingles, their freedom from knots, their fine straight grain, make them incomparable. On the score of durability they are equally satisfactory. On San Juan Island in Puget Sound, the roof of a house built in 1856 was covered with red cedar shingles which were still intact in 1916.

The introduction of the shingle-sawing machine has speeded production and correspondingly reduced the price. But hand-riven shakes, such as our ancestors knew, have never gone completely out of fashion, and, if you can afford them, they give a roof an individual and hand-wrought appearance that is not to be expected of any machine-made product.

The Northwest shake-maker is a very specialized artisan, almost an artist. His tools are ax, saw, and froe or splitting blade and his raw materials are usually salvaged from logging operations — old ones more than new, because old-time loggers were more wasteful and left more good wood and high stumps. Usually the shake-maker builds himself a cabin in the midst of the big-butted stumps, and there he is likely (since he generally is an old man) to find enough shingle wood to work on the rest of his life. If he has a family, his sons help, and their wives and sisters tie the shakes into bundles. First, logs are sawn and then split into bolts of a size easy to handle and are trucked to the shed where the work can go on under all weathers. The shake-maker's implement, the froe, is perhaps the only hand tool that has not been changed through the centuries from the original model. It is a blade 14 to 20 inches long, and 3 inches wide, the butt end terminating in a metal ring or eye through which passes a wooden handle. The bolt of wood to be split is stood on end on a block, the froe is placed a half inch from the edge of the bolt, and then the handle of the froe, which is held firm in the right hand, is struck a blow on the butt by a club of vine maple, held in

the left hand. The blade bites into the cedar and a shake is neatly split off along the grain. Rough defects are then trimmed off, usually by women-folk. Then, when he has a truckful of shakes, the artisan drives to the local lumber yard, and sells for cash. With it he buys a twist of strong chewing tobacco, a supply of black-eyed peas, some kitchen ware and fixin's for his wife, and then returns happily to his stumps and froe, content in his life which is that of a specialist who earns little, perhaps, but is not replaceable by more ambitious men.

END



✓ Kwakiutl doorpost, British Columbia, 5 feet high.
(Location and photo credit same as preceding figure)

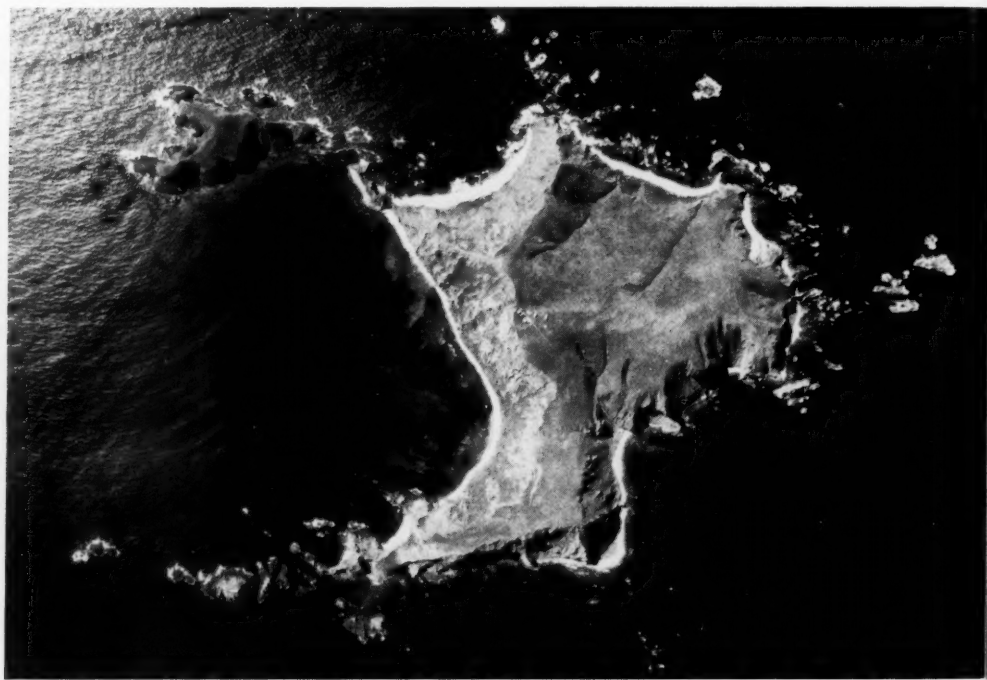
YOU SHOULD SEE THE BIRDS on Triangle Island!" On several occasions in our study of the birds and mammals on coastal islands of British Columbia we had been advised by fishermen to visit Triangle Island, the outermost of the Scott group off the northwest tip of Vancouver Island. We were told "millions of birds" were there, some of which (from the weird descriptions given us) defied identification. Also there were "rats" on the island unlike the ordinary run of rats. Rabbits, too, were said to be present. All of these reports served to whet

had established a lighthouse and wireless station on Triangle Island in 1910 because it was located near shipping lanes to the Orient and to the north. After nine years of operation, however, the station was discontinued because it was not serving its function. Weather conditions were so bad that visibility of the light was zero or practically so over long periods each season. Moreover it proved difficult to land and take off supplies and personnel, and living conditions on the island were such that frequent changes in staff were necessary.

Canada in the Pacific

Triangle Island

G. CLIFFORD CARL



our interest in visiting this island to see for ourselves what really was to be found there.

On making further inquiries we gathered several disquieting bits of information. Triangle Island offered no shelter for boats; it was necessary to stand well off shore and to make a landing by rowboat on a beach. June was the best month for making such a landing; at other seasons the weather was unfavorable. The area was subject to frequent storms and long periods of foggy weather. Gales sometimes reached a velocity of 125 miles per hour and lasted for many days.

We learned from more authoritative sources, too, that the Dominion Department of Transport

After the light was dismantled a weather and wireless station was maintained until 1921. Since that date no one has lived on Triangle Island — its only visitors have been occasional fishermen.

Despite the many uninviting features we discovered about Triangle Island we decided to visit it, especially since we were assured of transportation through the kind coöperation of the Dominion Fisheries Department that operates patrol vessels along our coast. Consequently one day toward the end of a recent June four of us from the Dominion Museum, Victoria, B.C., found ourselves ashore on Triangle Island and on our own.

We were surprised to find no trees on Triangle

▲ The air photo seemed to show Triangle Island covered with a carpet of grass. The straight white line through the dense scrub from the abandoned buildings to the beach where we camped is the old inclined railway. (Royal Canadian Air Force)

Island, although a typical coast forest exists on Cox and Lanz, the innermost islands of the Scott group, and a few spruce are on Beresford Island, only 10 or 12 miles away. A great part of the island, however, is covered with a dense tangle of salmon-berry pruned waist high by wind. The smoothly undulating surface of this shrubbery, all neatly trimmed as if by a gardener's shears, belies the extremely rough ground which lies underneath, as we soon discovered when we started up the steep slope from our camp site on the beach. The ground rose quickly but was covered with a tangled growth of roots and twisted trunks undermined by countless bird burrows and rabbit runs. Even though we kept to the route of the old inclined railway which once served the light station, the ties and other timbers were so rotted and the rusted rails so overgrown that it was back-breaking work to make any headway. Burdened with packs, cameras, guns and binoculars we struggled through the prickly tangle with frequent pauses to catch our breath and curse the air photo which seemed to show the island covered with a nice carpet of green grass!

In time we gained the highest point on the island, 690 feet above the sea. To the southeast lay the other islands in the Scott group — Sartine with its jagged, rocky outline; Beresford, dome-shaped and topped with a few trees; and on the horizon, Lanz and Cox, each with a dense covering of conifers. Triangle appeared to be about three-quarters of a mile long and about a half mile across its widest part.

Myriads of birds crowded the rocky pinnacles at the base of the hill upon which we were standing. With binoculars we could see that they were murre (*Uria aalge inornata*), one of the sea-birds we hoped to find. Undoubtedly they were nesting; we could hardly wait for an opportunity to make our way over to this portion of the beach. But first we busied ourselves with digging out some of the birds nesting in the soil on the summit of the island. These proved to be Cassin's auklet (*Ptychoramphus aleuticus*), a small alcid which breeds on similar islands from Baja California to the Aleutian Islands. Each burrow which we excavated contained an almost full-grown young bird, sometimes accompanied by a parent bird, suggesting that the nesting season for this species was just about over. Before we left we decided that Triangle Island supports the largest breeding colony of this bird so far recorded in British Co-

lumbia. We found burrows in almost all parts of the island from high-tide mark to the highest point, wherever the soil was suitable. Sometimes a burrow would be preceded by a short runway through tufted hair-grass and tangled rootlets of other plants which covered the ground. Most entrances were marked by well worn landing platforms, often embellished with piles of shrimp-like euphausiids, the chief food of these auklets.

Associated with the auklet burrows and especially numerous on the steeper slopes some distance above the beach were the burrows of tufted puffins which also nested here in large numbers. The excavations of the puffins were considerably larger than those of the auklets and were often located between and under tussocks of hair-grass on the almost vertical slopes, beginning as a rule about 200 feet above the sea and extending to the summit of the island. The entrances to the burrows made convenient footrests when climbing these slopes but birds flushing from the holes as if shot from a gun made progress extremely hazardous.

The disturbed birds wheeled by us on rapidly beating wings, turning their heads to eye us as they passed. Their brilliant red beaks, white faces, with yellowish ear tufts, and carmine feet sticking out behind like stabilizers gave these "sea-parrots" a most bizarre appearance. After a few circuits over the sea and past the cliff face the birds usually reentered their burrows, providing we had moved on a short distance. They appeared anxious to resume the incubating we had rudely interrupted.

At sundown we noticed greatly increased activity in the puffin colony. Dozens, scores, and hundreds of birds apparently emerged from their burrows and began wheeling silently overhead in the darkening sky as if out for exercise. Some would drop down to the water to rest, feed, or wash. Others seemed to appear from some distance out to sea. Apparently it was the change of shift, one parent bird leaving the nest in the burrow to spend a session at sea while its mate took on home duties.

That night as we relaxed in sleeping bags on weathered planking as a mattress we gradually became conscious of a new sound over and above the rustle of surf on the beach and the occasional bellow of Steller sea lions on a near-by rookery. The noise seemed to come from the sloping ground behind the tent. At first it seemed like an eerie mur-

muring rising and falling in waves, sometimes apparently from one area and then from another. After speculating among ourselves as to the origin of the sound we finally pulled on our pants, grabbed flashlights, and stumbled over driftwood and uneven ground to the first slope. The murmuring continued, seemingly from every point except just where we were standing. But in time we decided that some of the sounds were coming from below ground beneath our very feet. Here, the earth was riddled with the burrows of Cassin's auklets; undoubtedly these birds were the nocturnal songsters. Satisfied that we had solved the mystery we crawled back into bed and listened while the noise gradually reached a crescendo of wheezy avian whistles. Soon a new sound became evident at intervals — a swish overhead as if a projectile had passed too close for comfort. The auklets were leaving their burrows to fly out to sea. In a few minutes the air seemed filled with hurtling bodies as if we were under a bombardment. Occasionally a bird would strike the ridge rope of the tent or the aerial of our short-wave set, causing the canvas to vibrate with the shock. We began to realize that we had unwittingly pitched our tent on the flyway between a large colony of auklets and the sea. Apparently most of the birds occupying the slope behind us flew down the steep gully and over our portion of the beach to the water.

Next day we made our way again over the crest of Triangle and along a narrow beach to the southwestern tip of the island off which rose a secondary islet harboring many birds. As the tide was low we were able to cross the narrow neck of rocky beach connecting Triangle Island with its satellite.

Along the shoreline we disturbed guillemots, glaucous-winged gulls, and several pairs of black oyster catchers, those clowns of rocky beaches. All were apparently nesting.

Up the steep ridge of the islet we hauled ourselves and our packs, pausing frequently to admire the view or to take pictures — actually to take a breather. The ocean side of the islet fell away almost vertically to the rock-studded water but numerous shelves and pinnacles provided resting places for great numbers of murres which we had not seen from the main island. At a distance and to a casual observer they certainly looked like penguins, for the breast and belly are white; the head, back, and wings are black; and furthermore

the birds sit quite erect because their legs are placed toward the rear.

A gunshot caused hundreds of birds to drop off the cliff face and fly out over the water. Undoubtedly they were nesting; here at last was authentic evidence that this common sea-bird was breeding in Canada.

Anxious to obtain a few eggs as proof, we made our way to a point near the summit of the islet directly over a small group of birds on a ledge. These we were able to approach through the tus-



socks of feather-grass until we were very close. As we peered over the edge at the birds they cocked their heads, first on one side, then on the other while they stared back. Presently, before the spell was broken, one of us had the presence of mind to grab a bird in each hand and hang on until the rest of us helped him to drag his catch back to the safety of flatter ground — but not before the birds had delivered a few effective jabs with their sharp bills.

Typical of murres, each female lays only one egg. It is of large size, about 4 inches long and drawn out to an elongated point. Its shape causes it to roll in a tight circle when disturbed, thus

sometimes preventing its loss from a narrow ledge since no nest is built. Each is beautifully marked with mottlings and spots of brown or purplish-black on a greenish or bluish-white background and no two appear to be exactly alike in pattern or color.

That night we retired with the sky overcast and rain beginning to fall. The wind was rising. Above the noise of the mounting storm we heard the auklets start their yammering but considerably later than on the first night; their flight was apparently delayed by the unfavorable weather.

During the next few hours, which now seem part of a fantastic nightmare, the gusts of wind increased in violence until the whole camp seemed on the point of blowing away. For a while we repaired rips as they started but under the incessant pounding whole seams began to give way. Admitting defeat, we collapsed the tent to save it from destruction, stowed our precious equipment and specimens under the overturned skiff, and found some shelter by huddling against an overhanging rock wall facing the beach. Here we watched the wind curl back the tops of breaking combers until the storm subsided about mid-morning.

A fire of blazing logs helped to dry us out and raised our spirits so that by early afternoon we were more or less reorganized and ready to go again.

This time we made our way along the beach south of camp, the only direction it was possible to travel along the shore for any distance. Here we found another colony of birds, pelagic cormorants, busily engaged in nest-building, courting, or incubating. When disturbed, hundreds of birds would peel off the face of the cliff in sweeping curves to fly out over the sea and back again to the nest. In this area and in other parts of Triangle Island where other colonies were found we estimated that there were more than two thousand breeding birds, the largest nesting population of cormorants we have yet found on the British Columbia coast.

While we spent most of our time observing birds we were much interested in the mammals, too, especially after we had caught our first specimen of white-footed mouse (*Peromyscus*) which measured 9 inches in total length. It seemed to us to be a giant in comparison with those commonly found on Vancouver Island which average about 7 inches. Now we understood how the report of

"rats" got started — certainly these mice were as large as young rats.

Meadow mice (*Microtus*) we found also, particularly on the grassy slopes some distance above the beach. These, too, were of an unusually large size and apparently of an undescribed subspecies.

On several occasions as we were looking over our catch or adding newly caught specimens to our collections we speculated as to how these small animals reached isolated islets such as Triangle. Were they survivors of residual populations which,



somehow, had lived through the ice ages or had they come over temporary ice-bridges? Had they been transported by Indians? Or had they landed on rafts of debris cast into the sea by landslides on the mainland?

The puzzle concerning the origin of these insular populations can not be easily solved. It will be necessary to do a great deal more exploration of our coastal islands to gather enough pieces so that when they are fitted together a pattern may show. In the meantime the gathering of the pieces is a fascinating occupation, one which offers the exploring biologist a challenge and an invitation at every turn.

END

▲ (left) A tufted puffin can give a hearty nip with its sharp bill.
(right) Charles Guiguet pins out another white-footed mouse (*Peromyscus*) for the Museum collection. (Author's photos)

Seagoing Scientist



THOMAS GORDON THOMPSON, hereinafter referred to as "Tommy," came to the University of Washington in 1914, with a Brooklyn accent, a boyish smile, a contagious enthusiasm, and an unruly head of hair. Today, at sixty-three, he has succeeded in retaining all of these attributes and has added others, one of which is a reputation as one of the outstanding oceanographers of the world.

The Brooklyn accent is responsible for one of the famous stories around the University of Washington. Professor Horace Byers, who believed in mixing literature and classical lore with his course in chemistry, one day used a Latin quotation containing the word "ego," when he happened to look in the back row and saw Tommy — always quite a hand for staying up nights — sitting there fast asleep. "Mr. Thompson," shouted Professor Byers in stentorian tones, "what is an ego?" Tommy, roused suddenly to consciousness and trying to appear as though he had been listening all the time, replied promptly and confidently, "It's a big boid."

The special language of Brooklyn has been tempered through the years by contact with other American dialects and various foreign languages, including the Scandinavian. Once in an international discussion,

Tommy stated concerning an action he disapproved, "That gets my goat." Subsequently a distinguished Danish scientist was overheard muttering to himself in a puzzled way, "Goat . . . goat . . . a mountain-dwelling quadruped. I don't get the connection."

Tommy Thompson is possibly the only oceanographer, past or present, who is known by his nickname over seven seas and six continents (just to be on the conservative side, we are assuming that, as of this writing, none of his friends and admirers are roaming about Antarctica, though they do get there from time to time). He is known as Tommy to his students, to fellow faculty members, to deans and university presidents, and to scientific colleagues in this country and abroad. Once at an international scientific congress I heard a distinguished geophysicist calling him Tommy. In a subsequent conversation I said to the geophysicist, "I guess you have known Tommy Thompson a long time." "Oh, no," he replied, "I just met him this week."

Why everybody calls him Tommy is not easy to explain. It is not because of any lack of dignity, but rather because he has such innate dignity that nobody considers it presumptuous to address him by a nickname. Another reason is one of convenience. Once

PACIFIC PROFILES

Tommy was walking home from his laboratory at 2 A.M., when he was accosted by the police who were looking for prowlers. On being asked to identify himself, he pulled out of his coat pocket and showed the bewildered police three letters, one addressed to Dr. Thomas G. Thompson, one to Professor Thomas G. Thompson, and one to Major Thomas G. Thompson. After service through both world wars, he was retired in 1946 with the rank of Colonel in the Army of the United States. His official title for twenty years was Director of the University of Washington Oceanographic Laboratories, and — in addition — his staff used to refer to him quite commonly as "the Admiral." It is easy to see why people are willing to settle for "Tommy" as the least common denominator.

Undoubtedly the most satisfying explanation of all was given by Tommy's wife, the late Harriet Galbraith Thompson. A visitor to the Oceanographic Laboratories a few years back was expostulating with her that a man as distinguished as her husband should not be called by his nickname. "That's not his nickname," Harriet replied, "that's his title!"

Tommy's manner, the reader may have guessed, is something other than professorial. This occasionally leads to errors in identity. Once when he was in Norway he made an appointment by telephone with Dr. Bjorn Helland-Hansen, Director of the Geophysical Institute in Bergen. The next morning, a minute or two before the appointed hour, Tommy breezed in to the Geophysical Institute and said to the secretary, "I'd like to see the Director." "Oh, no, sir," replied the secretary, surveying the hatless, insouciant young man, "that would be quite impossible. At ten o'clock the Director has an appointment with Professor Thompson from America, and at eleven o'clock he has an appointment with the King."

Tommy was born in Rosebank, New York, November 28, 1888. He grew up in Brooklyn, and graduated from the Brooklyn Commercial High School in 1906. Thereupon he went to work for the American Brass Company as a laboratory assistant. After five years in an industrial laboratory, he decided he wanted to be a professional chemist and enrolled in Clark University.

Here he functioned as the local forerunner of modern automatic thermostatically controlled heating. He supported himself through his freshman year by getting up at 4 A.M. and going around building fires and stoking furnaces for various clients who liked to get up in a warm house. Later he became manager of his fraternity and of the student bookstore, for which services he got his room and board and was able to lead a life of comparative ease.

Academically he distinguished — and very nearly extinguished — himself by doing an entire semester's work in qualitative analysis over a week end. On a

Friday the professor gave each student twenty unknowns, which he was supposed to analyze in due course, this constituting the entire laboratory work for the term. On Monday morning Tommy showed up with all the compounds analyzed, and every analysis correct. The professor asserted flatly that nobody could accomplish such a feat except through dishonesty. So Tommy took him into the laboratory and explained how he had done it. Instead of analyzing the unknowns one at a time over a period of weeks, he had called on his experience in an industrial laboratory, had set all twenty experiments up at once and had run them through simultaneously.

For this and other accomplishments he was awarded a bachelor's degree at Clark in 1914, and immediately set out to go as far west as he could go. This brought him to the University of Washington, where — with the exception of military and other leaves — he has been ever since.

He was awarded his doctorate in chemistry at Washington in 1918 (while in military service), and advanced rapidly through the various academic ranks to become professor of chemistry in 1929. In the meantime he had become deeply interested in the chemistry of sea water and in other problems relating to the ocean. He urged that the university embark on a broad program of research along these lines.

In 1930 the University of Washington Oceanographic Laboratories were established, with Tommy Thompson as Director, a position he held with distinction until his retirement from administrative work in 1950. With a grant of \$351,000 from the Rockefeller Foundation, a laboratory building was constructed, and a research vessel, the *M.S. Catalyst*, was built. The seagoing adventures of Tommy and his staff cannot even be sketched here — they would fill volumes.

Suffice it to say that in his career as an oceanographer he has represented the American Geophysical Union and the National Research Council at international congresses in Stockholm (1930), Lisbon (1933), Edinburgh (1936), and Washington, D.C., (1939); he served as chairman of the Committee on Oceanography of the National Research Council from 1935 to 1941, and has been chairman of the United States Committee on Oceanography of the Pacific (of the Pacific Science Board) since 1947. He is a member of the National Academy of Sciences and a Fellow of the California Academy of Sciences. In 1948 he was awarded the Agassiz Medal of the National Academy of Sciences, a convincing testimony to the quantity and quality of oceanographic research he has been able to do while carrying a heavy administrative load. Apparently he has never lost the technique he demonstrated in his college course in qualitative analysis, of doing twenty things at the same time.

R. C. MILLER

Resources of a region

UNCLE SAM IN THE PACIFIC NORTHWEST: *Federal Management of Natural Resources in the Columbia River Valley.* By Charles McKinley. Publications of the Bureau of Business and Economic Research, University of California. University of California Press, Berkeley and Los Angeles. 1952. xx + 673 pp., numerous maps and diagrams. \$7.50.

THIS WORK, which has just come off the press too late for the comprehensive review in this issue it should have, will be of the greatest value to various users for various reasons. It defines and describes the Pacific Northwest as a distinct region, with a look at its natural resources and the problems of their conservation and management. The author's chief purposes, however, are to analyze the structure and operations, the relations and conflicts of the multitudinous Federal agencies engaged in management of the region's resources, and to submit proposals that would lead to greater interagency cooperation as well as better teamwork and understanding between government and private industry—both, in the interests of more effective planning for development and conservation. Mr. McKinley is on the faculty of Reed College, Portland, and served ten years as consultant to the Pacific Northwest Regional Planning Commission. He is intimately acquainted with the area of his study.

EDITOR'S END PAPERS

Earlier American

TREASURE IN THE DUST: *Exploring Ancient North America.* By Frank C. Hibben. J. B. Lippincott Company, Philadelphia and New York. 1951. 311 pp., 19 halftone illus. \$5.00.

THE CALIFORNIA INDIANS: *A Source Book.* Compiled and edited by R. F. Heizer and M. A. Whipple. University of California Press, Berkeley and Los Angeles. 1951. 487 pp., 12 maps, 15 text figs. (drawings and photographs). \$6.50.

THE FOUR AGES OF TSURAI: *A Documentary History of the Indian Village on Trinidad Bay.* By Robert F. Heizer and John E. Mills. Translations of Spanish documents by Donald C. Cutter. University of California Press, Berkeley and Los Angeles. 1952. 207 pp., 10 halftone plates, 3 text figs. \$3.75.

ART OF THE NORTHWEST COAST INDIANS. By Robert Bruce Inverarity. University of California Press, Berkeley and Los Angeles. 1950. xiv + 243 pp., 279 half-tone and 7 full color photographs, end-paper map. \$10.00.

NATIVE ARTS OF THE PACIFIC NORTHWEST. Introductory text by Robert Tyler Davis. Stanford Art Series (first volume), Stanford University Press. 1949. 165 pp., 194 half-tone and 5 full color photographs. \$10.00.

ANYONE with access to books and a little curiosity about a number of things can enjoy the kind of experience we'll attempt to describe here. There are endless ways it might begin. Suppose — something editors hope for — this issue stimulates you to more than passing interest in, say, the Indians of the Northwest. The immediate action response

should be a trip to your local museum, the public library, or — publishers pray for this as Hopis pray for rain — your nearest bookstore.

The occupant of an editor's chair has, of course, the advantage of the inside track. He sits at a crossroads of books, manuscripts, and ideas coming and going and he can see what's shaping up. His experience of the journal he edits is inevitably the reverse of the reader's; nevertheless, beyond a certain point they go along together.

The experience we want to relate began with a book and developed through an incorrigible mental habit of looking for connections between things. Long before this Northwest issue became a working idea backed up by material in hand a review copy of Frank C. Hibben's *TREASURE IN THE DUST* came our way. Now, we've had for years more than idle interest in how and from where man came to America and what he did when he got here — read something once in a while, even did a bit of field work with archeologists. At that not too distant time, in the sharded dust of a rediscovered Southwest cliff dwelling, one of the experts said, "We know less about American archeology today than we did a quarter of a century ago." But much has been unearthed since we dug, and earlier knowledge reassessed and correlated. Time now to take stock and tally what treasure the dust has yielded. Dr. Hibben was the man to do this and make good sense and good reading for the most of us to whom archeology meant digging up old ruins. Starting on the bottom rung as water boy for an expedition excavating the Ohio mounds, he worked his way up through various universities and museums to a Harvard Ph.D. and a University of New Mexico professorship in anthropology. As author he was already known to a large public for two books relating to another major interest, big game — these are *Hunting American Lions* and *Hunting American Bears*.

In his brief introductory chapter, Dr. Hibben reminds us that although "American civilization as we now know it was chiefly European" in origin, there is a "heritage of experience" in our land, "unknown to the average American" of today, "consisting of the doings of early Americans for some thirty thousand years." It was anything but a virtually unpopulated wilderness that Europeans found the new continents to be at the close of those millennia. "From the tip of Tierra del Fuego to the Arctic coasts of Baffin land, the American 'Indians' had taken their stand in every conceivable kind of terrain and climate to work out a way of life."

This brings the author to the theme of his book. "All life is a series of experiments. He profits most who knows the experiments of others." What determined the infinitely varied modes of life of these earlier inhabitants of this land? Their objectives, we may say, were different from ours, if indeed they had any beyond the filling of their bellies. "Actually, the goal in life of all people at all times is exactly the same. Every man and every woman seeks happiness according to his own designs." Only by salvaging the treasure in the dust can we latecomers learn the dim outlines of it, but "how wonderful it would be to know this whole story, to have the rich background of the experiments, the strivings, and the final attainments of all the many Americans who have lived in this same country before us."

Dr. Hibben then briefly outlines the methods of the

treasure hunters. Archeologists are detectives, but instead of capturing men, they try to recapture human experience. They make use of practically every other science — even, today, nuclear physics, with the discovery of a method of dating by measuring the disintegration of radio-active carbon.

The question, How did man come to America? is answerable: he must have arrived in his present evolutionary form — no protohuman or “missing link” evidence has ever been found in the New World. “Lost continents” — Atlantis, Lemuria, Mu — are pure fantasy. Intelligent consideration of the plausible theories remaining invariably lands us in the Bering Strait, or on the supposed Bering Isthmus of the late Pleistocene. “The ancestors of the American Indians, the first immigrants to America, came that way.” They were fully evolved modern *Homo sapiens*, and they hunted the mammoth and the mastodon as they came, over into Alaska and down the valley of the Yukon.

Salish mask
of cedar wood
(from *Art of the
Northwest Coast
Indians*).



The facts are in the record; they turn up by chance, here and there: shaped flint points mixed with bones of extinct mammals found in rock beds of a certain age exposed in a Yukon gold-mining pit — the most direct kind of evidence. This is the romance of archeology, the finding of the clues, often by pure luck, sometimes by the following of a hunch or a lead, occasionally by systematic searching in the kind of place where a scientist has reasoned a given sort of evidence *ought* to be found.

Not all the discoverers are seasoned archeologists. A Negro cowboy spotted the 10,000-year-old bison bones that held the Folsom arrow points in an arroyo bank. A Harvard graduate student in his early twenties brought out of the dust of Bat Cave, also in New Mexico, the primitive maize that pointed to the beginnings of American agriculture. Most of the discoveries, moreover, have yet to be made. There is the ever-present lure of what may be just around the next bend or under the next layer of dirt.

One of the most baffling and fascinating searches for human beginnings has been that leading back three thousand years or so from the living Eskimo. Another, with speculation dating from the voyages of Captain Cook and his Spanish predecessors on the Northwest Coast, concerns the provenance of the culturally related tribes whose prodigies of woodcarving figure in Mr. Peattie's article on “The Canoe Cedar” — Dr. Hibben calls them the salmon fishers. While this culture of totem pole, seagoing canoe, and pot-

latch waxed fat on the ocean's bounty, California meanwhile was being scrounged for berries, roots, grubs, and acorns by the people who came to be called, contemptuously, Digger Indians — “The Gatherers” of this book; the Southwest was watching a large population spread over canyon and mesa, build, till, irrigate, then mostly disappear; and earth from the Mississippi Valley to the Eastern Seaboard was being heaped up into strange serpentine mounds by a people preoccupied with death.

So it was: the entire continent ultimately teemed with men in various walks of life — fishermen, hunters, farmers, potters, basketmakers, moundbuilders, foragers, carvers, irrigation engineers, stonemasons. Each region gave rise to its particular culture, or succession of cultures. The Great Plains, for instance, were roamed first by early hunters; these took up somewhere in the course of time the new idea of agriculture, only to abandon their farms in recent centuries and mount the mustang progeny of Spanish horses for the pursuit of the bison which had begun to darken these same Plains. The Valley of Mexico and Yucatan produced the high Aztec and Mayan civilizations, devoted to empire building, priestcraft, architecture, and astronomy. When Europeans — Norsemen in the van — first fell upon this continent, from the east, the people that had got here tens of thousands of years ahead of them, from the northwest, had already tried every known way of life. Many remain wholly primitive today; on the other hand, “with the knowledge of agriculture and the use of some metals, American Indians evolved civilizations as brilliant as any in the Old World.” Dr. Hibben has made an absorbing and instructive book of this gamut of human life in ancient North America.

If we may return to the theme of experience pursued through books, *Treasure in the Dust* becomes a point from which trails fork out in all directions. Dr. Hibben's chapter on “The Gatherers,” to take one, leads directly to *THE CALIFORNIA INDIANS*, a compilation from sources by two members of the University of California Department of Anthropology. Robert F. Heizer is associate professor; Mary Anne Whipple is the department's editor. Dr. Heizer is well known beyond the Berkeley campus for his activities as director of the University's Archeological Survey. The compilers point out that “the source book presented here is in no sense a substitute for Kroeber's impressive” *Handbook of the Indians of California* (1925, out of print) which “is almost three times as long, describes each tribe separately and in detail, and is a technical monograph including comprehensive discussions of social and religious systems, as well as material culture. The present collection of essays is intended for a lay public rather than a professional group; a survey rather than an encyclopedia for reference work, it attempts to offer the reader interested in the Indians of California articles and extracts that provide the necessary background for an understanding of the culture of the first inhabitants of the State” (Preface). Quite properly, and for this reader happily, Alfred L. Kroeber's papers bulk large in the 500-page book. At first glance their style looks cold; then it dawns that here is fact sharply told, conclusion cleanly drawn.

Other eminent contributors appear: E. W. Gifford, R. B. Dixon, R. H. Olson, T. T. Waterman — the list is long. Historic sources are included: Pedro Font, Pedro Fages, José Espinosa y Tello; and Carl Meyer's sympathetic ac-

count of "The Yurok of Trinidad Bay, 1851" leads directly to our next book, which takes us one more step from the broad context — from the continental to the regional to the local. *THE FOUR AGES OF TSURAI* records the last years of a single northern California coastal village. Dr. Heizer is again senior editor, John E. Mills is on the faculty of the University of Washington.

After an introduction and account of the prehistoric culture through archeological findings, we enter Trinidad Bay in 1775 with Don Juan Francisco de la Bodega y Quadra, captain of the schooner *Sonora*, Don Bruno de Hezeta, commander of the Spanish expedition, and other of His Catholic Majesty's officers and their chaplain. Their several descriptions of the same landing and subsequent intercourse with these peaceable fisherfolk show intelligent and detailed observation, with due allowance for their inborn sense of superiority over naked unbaptized savages.

The Spanish, in accord with their royal directives, took formal possession and erected a cross, then went their way. Tsurai slept in uncivilized peace until Captain George Vancouver dropped anchor in Trinidad Bay, 1793, to be followed by a Spanish brigantine the same year. After Discovery came Exploitation — a half century of the fur trade beginning 1804. When the trader *Lelia Byrd* arrived "relations between the white men and the Indians were generally unfriendly, and open fighting broke out between them." Two years later another ship had trouble, "probably the result of molesting the women or engaging in too sharp trading, and one of the Trinidad Indians was killed." Again the contemporary journals are detailed, and also clearly reveal the changing temper of Tsurai under repeated impact of aliens on the make.

From 1817 to 1849 Tsurai was left pretty much to itself. With the discovery of gold on the Trinity River, the storm really broke. Trinidad Bay became a supply port for the placer mines; a town was laid out and boomed to several thousand, but within four years other ports had superseded it. Those few years were the beginning of the end for the gentle villagers, however; the brutal stripe of miners and sailors who cheated, raped, and murdered them can give us no pride. Who were the savages?

Carl Meyer was a kindly, civilized German who won the Indians' friendship during a stay at Tsurai in 1851. His account, here fully in context, is virtually identical with that cited above as appearing in *The California Indians*. Finally, "Baron Hans von Loeffelholz and his son Karl have given us the most valuable and detailed account of the Trinidad natives in their observations made from 1850 to 1856" and published in a Vienna anthropological journal of 1893. And the editors need only three pages to wind up the last of *The Four Ages of Tsurai* — "One man who as a youth had lived in the village said, 'Tsurai just died out.' The last house occupied was that of Humpback Jim who died in 1913 or 1914. His wife lived until 1916 when she was removed, shortly died, and was buried elsewhere. *Sic transit gloria Tsuraiensis*."

Geographically, Trinidad Bay may be regarded as the southernmost reach of the Northwest Coast Indians. The Yurok, however, cannot be linked culturally with Dr. Hibben's "Salmon Fishers" whose superlative craftsmanship in wood, stone, horn, and textiles forms the subject of two important recent books, the climax of our experience. If Donald Culross Peattie's article and the tantalizing sample

of illustrations leave you wild to see more of this brilliant artistry, the graphic media are available.

It is decent to assume there is only coincidence in the publishing in close succession of two such books, by two neighboring university presses, as Robert Tyler Davis' *NATIVE ARTS OF THE PACIFIC NORTHWEST* and Robert Bruce Inverarity's *ART OF THE NORTHWEST COAST INDIANS*. The astonishing fact is that here are two magnificently conceived and executed books — art books in the best sense — both on the same closely defined segments of the world's great art, with about five hundred separate illustrations between them — yet with absolutely no duplication of examples! So far from trying to give one book an edge on the other, we are bound to say that from either one you will get a thrilling comprehension — to many it will be a revelation — of an incomparable art that is at the same time *the* material culture of its creators (the simplest object of everyday use, it would seem, had to show a designer's hand). One wishing to increase his cultural dimensions can achieve that with either book. The more deeply concerned student should have both if he can possibly afford to. They are genuinely supplemental to each other, especially in their superb illustrations.

Not in any way to detract from either book, certain differences should be pointed out. The considerably longer text of Mr. Inverarity (who spent some 20 years in research among the Northwest Coast tribes and is now director of the Museum of International Folk Art in Santa Fe, New Mexico) has more of historical and ethnological background. Mr. Davis (he is director of Montreal's Museum of Fine Arts, professor at McGill University, and former director of the Portland Art Museum) holds more strictly to discussing the art itself and its cultural significance. He also describes and illustrates Eskimo art, which Mr. Inverarity omits. It should be mentioned here that all the Davis illustrations are of objects in one notable collection now in the Portland Art Museum. Those of the Inverarity are perhaps more widely representative since they include totem poles and decorated plank houses in situ and show articles in museums and private collections all over this country and in Canada, as well as in London and Paris. It still adds up to one thing: you'll want both books!

With these notable contributions from the California and Stanford university presses, our adventure through books winds up in a burst of glory. So did the art of the Northwest Coast Indians, as Mr. Peattie pointed out. White civilization killed it. Gone the same way is the California Indian art of basketmaking — perhaps the greatest thing of its kind the world ever saw. The ivory and driftwood art of the Eskimo, with its "grace, apparent ease, and pervasive humor," is dying. "Modern man," Mr. Davis concludes, "whose realities and values are based on the acquisition and control of material, can only look on these primitive people with considerable envy. We would certainly regard many aspects of their living with distaste, but in one respect it was infinitely superior to ours. It was lived with imagination, form, and style." Is such a trend in design for living as the one labeled "Pacifica" our belated recognition — have so-called primitive peoples had something in their lives that could, through intelligent adaptation, make ours come nearer to an ideal? Contemplate with some humility, as you read these books, the earlier American ways of life. We came just yesterday. D.G.K.



Burton M. Oliver
Supervisor of the Thrift, Conservation, and School Savings Section, Los Angeles City Board of Education, evaluates the Audubon Camp of California.

... "It has been my pleasure to attend a two-week session at the **AUDUBON CAMP OF CALIFORNIA** and I can truthfully say that this was one of the finest educational as well as recreational experiences I have ever had"—

MR. OLIVER ADDS: "Two weeks at the Audubon Camp in the High Sierra is truly an exhilarating experience. The course, in addition to being highly instructional from the standpoint of usable materials and activities, clearly emphasizes the interrelationship of all plant and animal life as related to the welfare of man. Surely, if our nation is to maintain or improve its present standard of living, more people than at present will have to do something about protecting all resources, and this type of experience on the part of teachers is bound to have a beneficial

influence on the rising generation. Because of the worthwhileness of this program, the In-Service Training Section of the Los Angeles City Schools has approved the satisfactory completion of a two-week course at the camp as a basis for point allowance toward a salary increase. Such approval is contingent upon the decision of the Committees appointed by the Superintendent. More than one hundred Los Angeles City teachers have attended the camp for credit and, according to reports, all of them are making good use of the many things they learned at the camp."

Audubon Camp of California

Conducted by the
NATIONAL AUDUBON SOCIETY

Five 2-Week Sessions in 1952

June 15 - June 28	July 13 - July 26
June 29 - July 12	July 27 - Aug. 9
Aug. 10 - Aug. 23	

For Reservations and Illustrated Folders, write to
National Audubon Society
693 Sutter Street, Room 201
San Francisco 2, California



EASY CHAIR COMFORT



LONG RUGGED WEAR



AMERICA'S FINEST OVERALL
Since 1850

?

WATCH PD



"Am I supposed to be glad you're big?"

Many people write us such comments as this: "I've heard people talk against big companies like you. Lately I've been reading your statements about bigness. Am I supposed to be glad you're big?"

The answer to this question depends on your answer to certain others. "Big business" often gets the blame for many things, so that some people have come to feel that bigness itself may be bad. But in making up your own mind on this proposition, it's well to consider the *good* that comes from this same bigness.

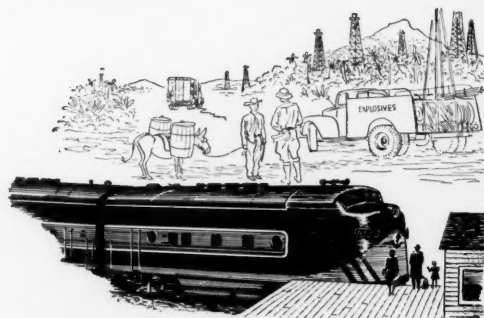


Do you like a bargain? You're getting one in gasoline. Except for taxes, gasoline today costs just about what it did in 1925. (And it's better gas; 2 gallons now do work that then took 3.) Why? Largely because of *competition* among big oil companies.

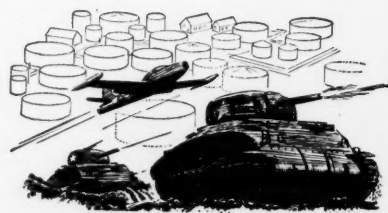


Do you like new and better things? Standard has spent over \$35,000,000 on research and technical service in the last 5 years, developing new or improved products, and new raw materials for other companies. Yet only when allowed to grow big, by serving you better, can we take on the work and risk involved.

Obviously, there are countless ways to express the benefits you gain by our bigness . . . countless questions we could ask, to which you'd probably answer "yes" just as readily. And if you like the things that bigness brings, then you *can* be glad we're big.



Are you glad you have the conveniences of this "machine age?" They depend heavily on oil. You're assured an ample supply of oil by the enterprise of big companies like Standard. We seek out new crude reserves, in this country and abroad, with exploration that may cost millions before the first gallon is found.



Do you want to keep your country strong? It takes big companies to back our fighting men and keep defense goods in full supply. Standard is at work for our government on aviation gasolines, atomic research, synthetic rubber, and other vital projects.

STANDARD OIL COMPANY OF CALIFORNIA
• plans ahead to serve you better

